Commission on Teacher Credentialing

Streamline and Strengthen the Accreditation Process (SSAP) Project FSR

CTC SSAP FEASIBILITY STUDY REPORT

Final v.1 1
January 27, 2015

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1.0 Executive Approval Transmittal

SIMM Section 20A

Feasibility Study Report
Executive Approval Transmittal

State Entity Name

California Commission on Teacher Credentialing

Project Title (maximum of 75 characters)	Department of Technology Project Number
Streamline & Strengthen the Accreditation Process	

Project Acronym	State Entity Priority	Agency Priority
SSAP	1	1

I am submitting the attached Feasibility Study Report (FSR) in support of our request for the California Department of Technology's approval to undertake this project.

I certify this FSR was prepared in accordance with State Administrative Manual Sections 4920-4930.1 and the proposed project is consistent with our information technology strategy as expressed in our current Agency Information Management Strategy.

I have reviewed and agree with the information in the attached FSR.

I certify the acquisition of the applicable information technology (IT) product(s) or service(s) required by my Agency/state entity that are subject to Government Code 11135 applying Section 508 of the Rehabilitation Act of 1973 as amended meets the requirements or qualifies for one or more exceptions (see following pages).

APPROVAL SIGNATURES	
Information Security Officer	**Date Signed**
Printed name: Dan Gonzales	1-16-2015
Enterprise Architect	**Date Signed**
for Mohammed Iqbal Printed name: Mohammed Iqbal	1/16/2015
Chief Information Officer	**Date Signed**
Printed name: Darren Addington	1/16/2015
Budget Officer	**Date Signed**
Printed name: Philip Chen	1/16/15
State Entity Director	**Date Signed**
Printed name: Mary Vixie Sandy	1-16-15
Agency Information Officer	**Date Signed**
Printed name: N/A	
Agency Secretary	**Date Signed**
Printed name: N/A	

Feasibility Study Report
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IT Accessibility Certification

Yes or No

Yes	The Proposed Project Meets Government Code 11135 / Section 508 Requirements and no exceptions apply.

Exceptions Not Requiring Alternative Means of Access

Yes or No	Accessibility Exception Justification
	The **Proposed** IT project meets the definition of a national security system.
	The **Proposed** IT project will be located in spaces frequented only by service personnel for maintenance, repair, or occasional monitoring of equipment (i.e., "Back Office Exception.)
	The **Proposed** IT acquisition is acquired by a contractor incidental to a contract.

Exceptions Requiring Alternative Means of Access for Persons with Disabilities

Yes or No	Accessibility Exception Justification
	Meeting the accessibility requirements would constitute an "undue burden" (i.e., a significant difficulty or expense considering all Agency/state entity resources). Explain: Describe the alternative means of access that will be provided that will allow individuals with disabilities to obtain the information or access the technology.
	No commercial solution is available to meet the requirements for the IT project that provides for accessibility. Explain: Describe the alternative means of access that will be provided that will allow individuals with disabilities to obtain the information or access the technology.

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IT Accessibility Certification
(continued)

Exceptions Requiring Alternative Means of Access for Persons with Disabilities

Yes or No	Accessibility Exception Justification
	No solution is available to meet the requirements for the IT project that does not require a fundamental alteration in the nature of the product or its components. Explain: Describe the alternative means of access that will be provided that will allow individuals with disabilities to obtain the information or access the technology.

2.0 IT Project Summary Package

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Streamline and Strengthen the Accreditation Process FSR
IT Project Summary Package

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1.	Submittal Date	1/20/2015

		FSR	PSP Only	Other:
2.	Type of Document	X		
	Project Number			

			Estimated Project Dates	
			Start	End
3.	Project Title	Streamline and Strengthen the Accreditation Process		
	Project Acronym	SSAP	7/1/2015	7/28/2017

4.	Submitting Agency/State Entity	California Commission on Teacher Credentialing
5.	Reporting Agency	

6.	Project Objectives
	To streamline and strengthen the accreditation system in order to collect additional data and shift the focus of the accreditation system from compliance to outcomes, which will help ensure the quality of educator preparation programs while also reducing the overall administrative burden of the system for both the state and for institutions that sponsor educator preparation programs.

8.	Major Milestones	Est Complete Date
	Initiation – Resources, Schedule, Charter	4/30/2015
	Development Phases	
	Phase II Create Data Dashboard	
	Stage I	6/30/2016
	Stage II	6/22/2017
	Phase III CASE & CTC Online Enhancements	
	Stage I	6/23/2016
	Stage II	6/15/2017
	Phase IV Security Enhancements-Replace F5	9/30/2015
	Phase V Upgrade/Migration of CTC WWW Site	6/29/2016
	Phase VI Backup recovery system	6/22/2016
	Closeout	7/28/2017
	PIER	4/12/2018
	Key Deliverables	
	Data Model	2/16/2016
	Stage I Dashboard & Enhancements	6/30/2016
	Stage II Dashboard & Enhancements	6/22/2017
	Backup recovery system	6/22/2016
	Maintenance & Operation Plans	7/10/2017

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7.	**Proposed Solution**
	The proposed solution is designed to strengthen the Commission's capacity to develop, organize, and retrieve information from surveys, assessments, and other sources so that reliable and consistent data are available to support decision making in accreditation, and so that the current emphasis on excessive documentation requested from and/or submitted by programs for accreditation purposes will be greatly reduced. The proposed solution contains the following components:

- Creating a Data Dashboard, using Business Intelligence (BI) software
- CASE and CTC Online enhancements to improve user friendliness
- CASE, CTC Online and FileMaker data model and data cleansing
- Web broadcasting equipment upgrade for providing end user training
- Security enhancements – replace network security device F5
- Security enhancements – User authentication for CTC Online for educators
- Successful upgrade or migration of the CTC WWW site to be hosted by OTech
- Backup recovery system for all of the Commission's critical applications to be hosted by OTech

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Project #	
Doc. Type	**FSR**

Executive Contacts								
	First Name	**Last Name**	**Area Code**	**Phone #**	**Ext.**	**Area Code**	**Fax #**	**E-mail**
Agency Secretary	NA							
State Entity Director	Mary	Vixie Sandy	916	322-6253		916	445-0800	msandy@ctc.ca.gov
Budget Officer	Philip	Chen	916	322-5774		916	323-5095	pchen@ctc.ca.gov
Information Security Officer	Dan	Gonzales	916	322-8634		916	322-2303	dgonzales@ctc.ca.gov
Enterprise Architect	Mohammed	Iqbal	916	327-0586		916	322-2303	miqbal@ctc.ca.gov
Chief Information Officer	Darren	Addington	916	322-4359		916	322-2303	daddington@ctc.ca.gov
Project Sponsor	Mary	Vixie Sandy	916	322-6253		916	445-0800	msandy@ctc.ca.gov

Direct Contacts								
	First Name	**Last Name**	**Area Code**	**Phone #**	**Ext.**	**Area Code**	**Fax #**	**E-mail**
Doc. prepared by	Darren	Addington (and Informatix)	916	322-4359		916	322-2303	daddington@ctc.ca.gov
Primary Contact	Darren	Addington	916	322-4359		916	322-2303	daddington@ctc.ca.gov
Contract Manager	Philip	Chen	916	322-5774		916	323-5095	pchen@ctc.ca.gov
Project Manager	Dept. of Tech.	Project Manager						

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1.	What is the date of your current Technology Recovery Plan (TRP)?	Date	6/30/2014		Project #	
2.	What is the date of your current Agency Information Management Strategy (AIMS)?	Date	2013-14 – The Current AIMS Plan is incorporated as part of the Department Strategic Plan		Doc. Type	**FSR**
3.	For the proposed project, provide the page reference in your current AIMS and/or strategic business plan.	Doc.	NA – See Strategic Plan References			
		Page #				

		Yes	No
4.	Is the project reportable to control agencies?	X	
	If YES, CHECK all that apply:		
X	a) **The project involves a budget action.**		
	b) **A new system development or acquisition that is specifically required by legislative mandate or is subject to special legislative review as specified in budget control language or other legislation.**		
X	c) **The estimated total development and acquisition cost exceeds the Department of Technology's established Agency/state entity delegated cost threshold and the project does not meet the criteria of a desktop and mobile computing commodity expenditure (see SAM 4989 – 4989.3).**		
	d) **The project meets a condition previously imposed by the Department of Technology.**		

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Doc. Type	FSR

Budget Augmentation Required?

No		
Yes	X	If YES, indicate fiscal year(s) and associated amount:

FY	2015/16	FY	2016/17	FY	2017/18	FY		FY	
$3,466,767		$1,533,233		$0					

PROJECT COSTS

							TOTAL
1.	Fiscal Year	2014/15	2015/16	2016/17	2017/18		TOTAL
2.	One-Time Cost	111,591	3,976,719	1,932,964	38,813		$6,060,087
3.	Continuing Costs	0	0	0	411,347		$ 411,347
4.	TOTAL PROJECT BUDGET		$3,976,719	$1,932,964	$450,160		$6,471,434

PROJECT FINANCIAL BENEFITS

5.	Cost Savings/Avoidances	$0	$0	$0	$0	$0	$0
6.	Revenue Increase	NA	NA	NA	NA	NA	NA

Note: Project costs includes redirected resources, $225,238 of one time project funds for 2015/16 and 2016/17 are being used to fund overtime and temp help, the rest of the redirected resources are being absorbed.

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Vendor Cost for FSR Development (if applicable)	$30,000 (in 2014/15 and not included below)	**Project #**	
		Doc. Type	**FSR**
Vendor Name	Informatix, Inc.		

VENDOR PROJECT BUDGET

		2014/15	2015/16	2016/17	2017/18		TOTAL
1.	**Fiscal Year**	2014/15	2015/16	2016/17	2017/18		**TOTAL**
2.	**Primary Vendor Budget ***	0	1,042,882	896,766	0		$1,939,648
3.	**Independent Oversight Budget**	0	112,560	112,560	0		$ 225,120
4.	**IV&V Budget**	0	0	0	0		$ 0
5.	**Other Budget (Project Manager)**	0	112,560	112,560	0		$ 225,120
6.	**TOTAL VENDOR BUDGET**	$0	$1,268,002	$1,121,886	$0		$2,389,888

*Breakdown of Primary Vendors Budgets	
There will be different vendors required for each of the phases listed below.	
Phase II Create Data Dashboard	$323,446
Phase III CASE & CTC Online Enhancements	
Stage I 2015/16	$609,216
Stage II 2016/17	$896,766
Phase V Upgrade/Migration of CTC WWW Site	$110,220
	$1,939,648

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RISK ASSESSMENT

	Yes	No
Has a Risk Management Plan been developed for this project?	X	

General Comment(s)
Refer to the Risk Management Plan in Section 7 of the FSR.

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3.0 Business Analysis

Refer to Stage 1 Business Analysis (S1BA) located in Appendix A.

4.0 Baseline Analysis

4.1 Current Method

4.1.1 OBJECTIVES OF THE CURRENT SYSTEM

The objective of the Commission's accreditation system is to monitor the quality of educator preparation in California and to ensure that educator preparation programs are aligned with state adopted content and performance standards for pupils. The Commission's accreditation system is the State's only mechanism for ensuring that credential preparation programs are effective in preparing program graduates to have the knowledge, skills, and abilities they need to help pupils achieve and be successful. To that end, the Commission has adopted a) standards of quality and effectiveness that describe what credential preparation must do in preparing candidates; and b) an accreditation framework that sets forth the policies of the Commission regarding the accreditation of educator preparation in California.

4.1.2 THE ABILITY OF THE SYSTEM TO MEET CURRENT AND PROJECTED PROGRAM AND WORKLOAD REQUIREMENTS (E.G., PROCESSING BACKLOGS OR INCREASING SYSTEM DEMANDS)

Although data collection is a feature of the current system, the system is focused more on input measures and compliance than on program outcomes and tells us little about the *actual* effectiveness of programs in preparing candidates to be effective educators. The Program Assessment process is a labor and paper intensive process for institutions and for the Commission and only monitors inputs as described by the program. Site visits do not focus on specific issues or on actual candidate and program outcomes. The ability to collect data and shift the focus of the accreditation system from compliance to outcomes would enable the Commission to implement a more streamlined system. This will strengthen its ability to ensure the quality of educator preparation programs while also reducing the overall administrative burden of the system for both the state and for institutions that sponsor educator preparation programs.

In order for the current computer system to be used for an outcome based accreditation program assessment, it must be enhanced and strengthened to:

- Expand survey capabilities
- Capture additional data elements in a user friendly format
- Provide a more robust data structure
- Provide better tools for analytics and reporting
- Enhance system security
- Provide user-friendly mechanisms for sharing data with the public and other entities.

4.1.3 LEVEL OF USER AND TECHNICAL STAFF SATISFACTION WITH THE SYSTEM

The current system for making accreditation decisions is paper and labor intensive, relies on multiple reports submitted by educator preparation programs, and does not have a technology interface for centralized data collection, storage, and analysis.

Although the system captures a lot of information, it does not capture all the data elements needed for reporting compliance and analysis. The data is not structured in a well-designed data model that takes into account the relationship of all the data in all the Commission's systems and does not provide flexibility to add new data that will be captured, resulting in data integrity issues and data redundancy. Much of the data in the existing system comes from spreadsheets that are manually manipulated and converted into reports.

Additionally, the current system does not meet public information needs. There is no comprehensive single information source for the public to look up and manipulate data elements about program quality, program outcomes, and general data on educator credentialing in California. The lack of a comprehensive data lookup system requires significant Commission staff time and effort to respond to public inquiries since the needed data are held in several different systems and formats.

Commission staff receives several ad hoc requests for data. Some data reports and requests take minimal effort on the part of CTC staff and other data reports and requests require significant CTC staff time. Some reports requite special programming to see data across multiple years and data sources. On an average, each month commission staff receives requests for 1-2 custom reports from the media, legislative staff, advocacy groups, governor's office, Dept. of Finance, CDE, and the public.

The current data systems contain data needed to prepare multiple reports required under state and/or federal law in multiple locations and formats. This requires gathering data from disparate sources, cleansing and verifying data.

4.1.4 DATA INPUT (E.G., KEY ENTRY, OPTICAL CHARACTER RECOGNITION), RELATED MANUAL PROCEDURES, PROCESSING (E.G., DATA VALIDATION ROUTINES) AND OUTPUT CHARACTERISTICS

- 80% of credential information gets into the system via input through CTC Online. The other 20% is through the paper applications that are input manually into the CASE system by CTC staff.

- Data from institutions is received via a FileMaker Pro interface.

- Over 250 entities submit recommendations for credentials annually via CTC Online

- WESTAT, a federal contractor, collects Title 2 information (at a candidate level) from institutions and submits it via one large Excel file. The information includes admission requirements, enrollment data, program completers and academic majors. This information does not go into the system – it is manually manipulated and put into reports.

- Candidate examination scores are received from examination contractors through a secure interface.

- Information for Federal Title II reporting and numerous statutorily required state reports are manually input into their system or submitted via Excel.

- Biennial reports and program assessment documents are submitted via email and contain matrices with metrics about the programs as well as lengthy narratives.

- Surveys responses are captured in FileMaker when someone completes a survey.

4.1.5 DATA CHARACTERISTICS (CONTENT, STRUCTURE, SIZE, VOLATILITY, COMPLETENESS, ACCURACY, ETC.)

Current data resides in multiple databases, in multiple servers, in multiple formats as well as in electronic narrative:

- Title II data (final data submitted to the USDOE) comes back to the Commission in excel file.

- Data needed for Teacher Supply Report comes from the Commission's CASE; a smaller dataset is moved into a FileMaker database for analysis/reporting purpose.

- Accreditation data in FileMaker database; Program Sponsor data is in another FileMaker database.

- Survey Outcomes data are in multiple FileMaker databases.

- Assignment Monitoring data are in multiple FileMaker databases.

- Biennial Reports

- Program Assessment narratives

Because data reside in multiple locations, it is very labor-intensive to create reports, and some of the data is duplicative. Many of the data elements that are required for mandated federal and state reports do not exist in the current systems.

4.1.6 SYSTEM PROVISIONS FOR SECURITY, PRIVACY AND CONFIDENTIALITY

Security capabilities in the CASE system meet internal security requirements today. Some information is confidential (privacy information) and is not displayed outside of the CASE system. The F5 network security device, which allows and watches the network traffic and denies service attacks, needs to be replaced with a new state of the art F5 that will continue to ensure that CTC is taking all of the needed precautions to prevent any kind of a data breach.

For technology recovery, all of the Commission's data is currently saved to tape and a vendor retrieves and saves tape in a local secure facility. CTC needs to move to having a backup recovery system for all of its critical applications including the new applications that will be implemented during the SSAP project.

4.1.7 EQUIPMENT REQUIREMENTS OF THE CURRENT SYSTEM (E.G., PROCESSORS, PERIPHERALS, AND COMMUNICATION DEVICES

Equipment requirements of the current system are illustrated in the CTC Network Diagram shown in Section 4.1.14 Existing Infrastructure.

4.1.8 SOFTWARE CHARACTERISTICS (E.G., APPLICATION SOFTWARE, OPERATING SYSTEM SOFTWARE, ETC.)

■ Siebel application framework

■ Siebel eSales

■ Oracle database

■ FileMaker Pro database

■ Linux operating system (used for Oracle Database only)

■ Crystal Reports

■ Windows Server

■ Microsoft Visio

■ Windows 7 OS

■ Microsoft Office Suite

■ Adobe reader / pro

4.1.9 INTERNAL AND EXTERNAL INTERFACES

External interfaces include:

■ Department of Social Services – child support information

■ Clearing House (NASDTEC) – interstate offenders information

■ National Education Systems (NES) – testing data

■ Education Test Services (ETS) – testing data

■ U.S. Department of Justice – DOJ and FBI clearance and arrest data

■ Districts, Counties, Institutions – credentials and correspondence

■ U.S. Postal Service – postal directory

■ SB1666, Teaching Fellowship Program – program participant data – not currently active

■ SB395, Certificate for Staff Development – Certification Data

■ CDE-Decile and CalPads data that we currently get for T2 and TSR report
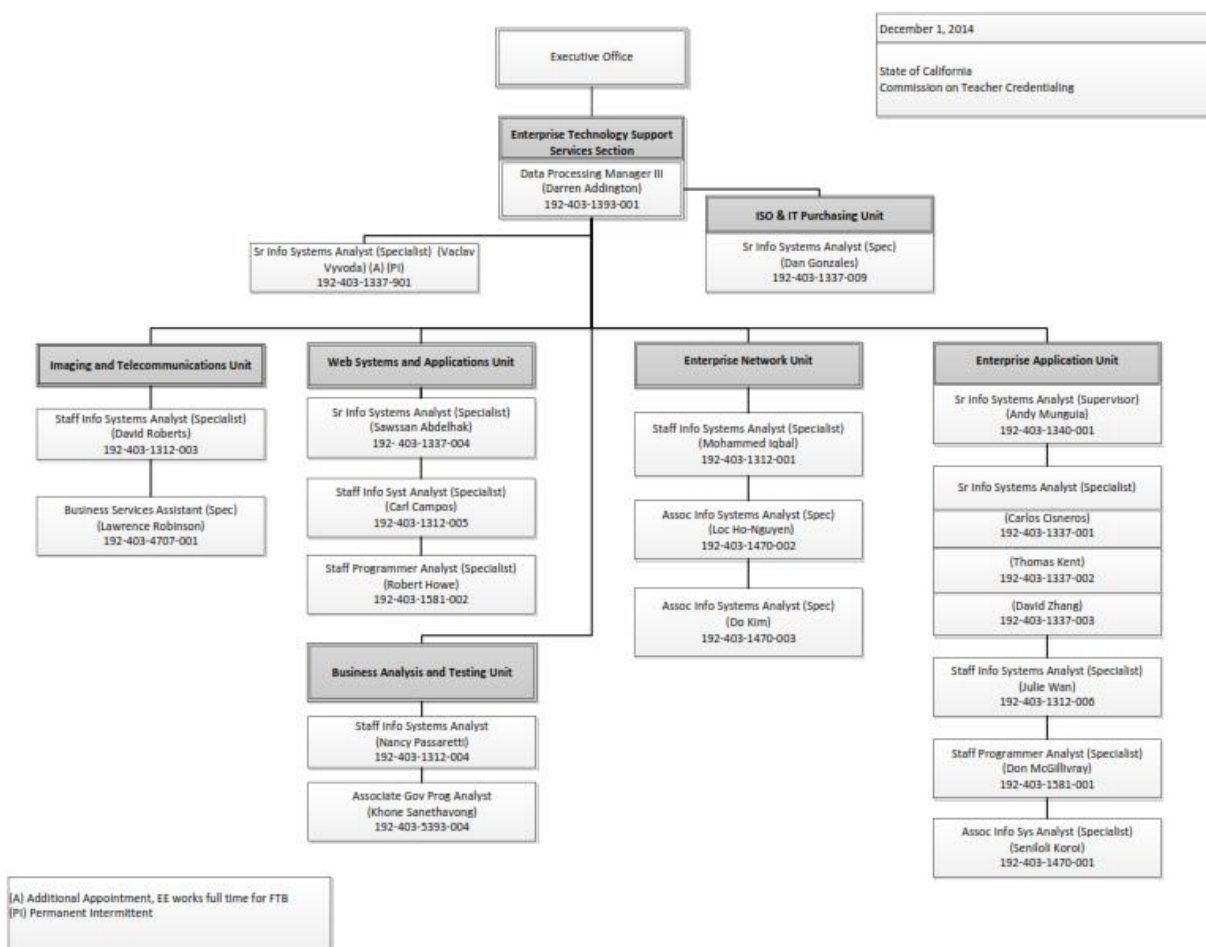
Internal interfaces include:

■ Moving Data from CASE to FileMaker for program completer surveys.

4.1.10 PERSONNEL REQUIREMENTS, INCLUDING MANAGEMENT, DATA ENTRY, OPERATIONS, MAINTENANCE, AND USER LIAISON

The Enterprise Technology Support Services (ETSS) Section staff currently supports the existing system operations and maintenance. The ETSS organization chart is displayed below:

December 1, 2014

State of California
Commission on Teacher Credentialing

Executive Office

Enterprise Technology Support Services Section
Data Processing Manager III
(Darren Addington)
192-403-1393-001

ISO & IT Purchasing Unit
Sr Info Systems Analyst (Spec)
(Dan Gonzales)
192-403-1337-009

Sr Info Systems Analyst (Specialist) (Vaclav Vyvoda) (A) (PI)
192-403-1337-901

Imaging and Telecommunications Unit
Staff Info Systems Analyst (Specialist)
(David Roberts)
192-403-1312-003

Business Services Assistant (Spec)
(Lawrence Robinson)
192-403-4707-001

Web Systems and Applications Unit
Sr Info Systems Analyst (Specialist)
(Sawssan Abdelhak)
192-403-1337-004

Staff Info Syst Analyst (Specialist)
(Carl Campos)
192-403-1312-005

Staff Programmer Analyst (Specialist)
(Robert Howe)
192-403-1581-002

Business Analysis and Testing Unit
Staff Info Systems Analyst
(Nancy Passaretti)
192-403-1312-004

Associate Gov Prog Analyst
(Khone Sanethavong)
192-403-5393-004

Enterprise Network Unit
Staff Info Systems Analyst (Specialist)
(Mohammed Iqbal)
192-403-1312-001

Assoc Info Systems Analyst (Spec)
(Loc Ho-Nguyen)
192-403-1470-002

Assoc Info Systems Analyst (Spec)
(Do Kim)
192-403-1470-003

Enterprise Application Unit
Sr Info Systems Analyst (Supervisor)
(Andy Munguia)
192-403-1340-001

Sr Info Systems Analyst (Specialist)

(Carlos Cisneros)
192-403-1337-001

(Thomas Kent)
192-403-1337-002

(David Zhang)
192-403-1337-003

Staff Info Systems Analyst (Specialist)
(Julie Wan)
192-403-1312-006

Staff Programmer Analyst (Specialist)
(Don McGillivray)
192-403-1581-001

Assoc Info Sys Analyst (Specialist)
(Seniloli Koroi)
192-403-1470-001

(A) Additional Appointment, EE works full time for FTB
(PI) Permanent Intermittent

The Professional Services Division Staff manage data and provide analytical and reporting support. Key staff members are identified below:

- Title II reporting: Marjorie Suckow, Consultant. In addition, Marjorie works with requests for data from the legislature, the DOF, and others

- Teacher Supply Report: Marjorie Suckow and Roxann Purdue, Consultants, Phi Phi Lau - Analyst

- Assignment Monitoring: Roxann Purdue, Consultant and Angel Lopez, Analyst

- Examination data: Mike Taylor, Consultant, Phi Phi Lau and Caroline Baltazar, Analysts, and Phyllis Jacobson, Administrator

- Accreditation data, including Biennial Reports and Program Assessment narratives: Cheryl Hickey and Catherine Kearney, Administrators, Kathryn Polster, Analyst Katie Croy and Lynette Roby, Consultants, and Teri Clark, Director

- NASDTEC data and misconduct data: Sherry Henderson, Senior Legal Analyst

4.1.11 SYSTEM DOCUMENTATION (FORMAT, AVAILABILITY, AND ACCURACY)

The Commission maintains the following system documentation. All of these documents are stored on the Intranet web server:

- Use Cases for business process – last updated several years ago

- Business process documents that encompass technical steps – 10 documents – updated when changes occur

- Process flow diagrams – 4 documents – updated when changes occur

- Logical data Model – updated when changes occur, reviewed bi -yearly

- Physical data Model – updated when changes occur, reviewed bi-yearly

- Interface Design Document – updated when changes occur, reviewed yearly

- ETSS Service Agreements – 3 document – updated when changes occur, reviewed bi-yearly

- Data dictionary for specific areas – updated when changes occur

- CASE process flow documentation – Updated when changes occur

- CASE Technical Development Design Standards – updated when changes occur

- CTC Scheduled Process – All processes that run, the time, how long, the systems, the outcome – updated when changes occur, reviewed yearly

4.1.12 FAILURES OF THE CURRENT SYSTEM TO MEET THE OBJECTIVES AND FUNCTIONAL REQUIREMENTS OF AN ACCEPTABLE RESPONSE TO THE PROBLEM OR OPPORTUNITY

The Commission's current accreditation system is not designed to focus on candidate and program outcomes data, and relies heavily on voluminous documentation and narrative responses that describe how a program meets specified standards. At the time the current system was developed, national accreditation models as well as other state accreditation systems were more focused on reviewing qualitative program elements and assuring compliance with standards. The Commission's system needs to be refocused, streamlined, updated, and repurposed to become an accreditation system that uses a variety of program and candidates outcomes data to inform decision making, identify programs that need improvement and/or possibly need to be closed down, and highlight and promote programs that are exemplary in their practices.

The current systems need to be augmented to strengthen the Commission's capacity to organize and retrieve information from credential applications, surveys, assessments, and other sources so that reliable and consistent data are available to support decision making in accreditation, and the current emphasis on excessive documentation requested from and/or submitted by programs for accreditation purposes will be significantly reduced.

Much of the current data used by the Commission resides in FileMaker databases. FileMaker is a mid-tier database tool that is not sufficiently robust to meet the data and reporting requirements. Compilation of data and generation of reports is mostly a manual and labor-

intensive process. Not all reporting requirements can be achieved today due to data elements needed for reports that are not currently captured, stored or accessible in the system.

The Commission's WWW site contains a great majority of CTC's publically and privately accessible information, but has not had its core technology upgraded in more than seven years. The current CTC WWW site is incapable of information interactivity, responsive design and subject matter expert (SME) information publishing. There is no comprehensive or CTC WWW-integrated method for publishing information dynamically. The lack of dynamic information publishing also creates data redundancy, where the same information is published multiple times in multiple places, rather than making information dynamically reusable across the WWW site.

Some data is not public due to state privacy statutes. The current system for providing public information relies on multiple databases that must be constantly reanalyzed to respond to public information requests.

4.1.13 TECHNICAL ENVIRONMENT

Listed below are considerations for the technical environment within which the proposed solution will be implemented:

■ **The expected operational life of a proposed solution -**

- Hardware – Replaced every 5 years
- Software maintained and kept up to date - Ongoing

■ **The necessary interaction of a proposed solution with other systems, Agency/state entity programs, and organizations (such as sharing of information or intergovernmental data exchange) -** Program information in FileMaker databases, Assignment Monitoring systems in FileMaker databases, CASE and CTC online data in Oracle database with Siebel CRM, California Department of Education (CDE) CALPADS data.

■ **State-level information processing policies, such as the enterprise system strategy -** The system must comply with all federal and state information processing and security laws, rules, regulations and policies.

■ **Financial constraints, including fiscal year limitations and potential financial impact on local government -** CTC has no current year or future year funding for this project. Funding information is provided in the attached BCP.

■ **Legal and public policy constraints (such as confidentiality, security and privacy, the Freedom of Information Act, the Information Practices Act, the California Public Records Act, the State Records Management Act, or other legislatively mandated requirements) -** Legal and public policy constraints include the Information Practices Act, the Public Records Act, and the State Records Management Act as applicable to the Commission. In addition, there are also sections of the Education Code that are applicable to the Commission's records (sections 44230, 44248, and 44341).

■ **Agency/state entity policies and procedures related to information management** – The Commission's Computer Security and Usage Policies apply to the current and future environment. The Commission must comply with applicable State information technology policies (e.g., SAM, SIMM, NIST, etc.).

■ **Anticipated changes in equipment, software, or the operating environment -** The Siebel CRM systems are being moved from stand-alone servers to a virtual server environment.

■ **Availability of personnel resources for development and operation of information management applications, including required special skills and potential recruitment** – Personnel resources required for Accreditation IT staff include:

- Staff Programmer Analyst (Specialist)
    - Structured Query Language (SQL) programming
    - Data linking duties
    - Data planning
    - Technology evaluation and consulting
    - Data management policies

- Staff Information System Analyst (Specialist)
    - Database administration (Oracle BI)
    - Data planning
    - Data linking duties
    - Technology evaluation and consulting
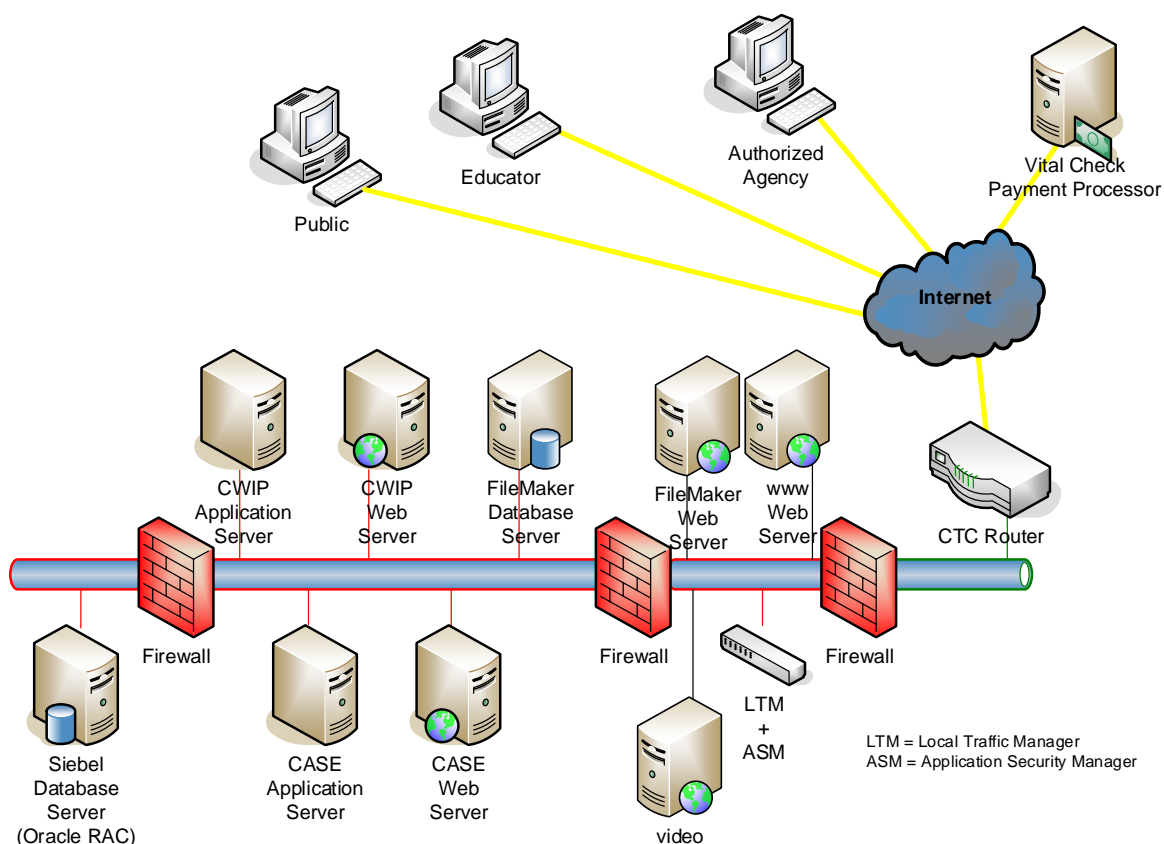   - Data management policies

4.1.14 EXISTING INFRASTRUCTURE

The following diagram illustrates the existing infrastructure for the Commission's accreditation system:

CTC Network Diagram

(current)

Note: CTC currently doesn't have DMZ server behind the F5. During the implementation of the SSAP project, all servers will be placed behind the F5 to enhance security

- **Desktop workstations** – HP workstation; Apple Mac Pro.

- **DATA source servers** - FileMaker database server – physical servers running on Windows server. FileMaker server. Oracle database server – physical server running on Oracle Linux OS. Oracle Database. All servers are blade servers with Oracle database stored on SAN.

- **Network protocols** – FileMaker proprietary protocol (but is also ODBC compliant). Oracle sqlnet. ODBC compliant as well.

- **Application development software** – FileMaker Pro Advanced. Oracle – Oracle SQL developer, Toad by Quest.

- **Personal productivity software**

  - Microsoft Office or compatible Office document viewer
  - Adobe Reader or compatible PDF viewer

- **Operating System Software** – Windows

- **Database management software** – FileMaker Server; Oracle DBMS.

- **Web broadcasting system** – Windows Server, Accordant

5.0 Proposed Solution

CTC's proposed solution will be designed to strengthen the Commission's capacity to develop, organize, and retrieve information from surveys, assessments, and other sources so that reliable and consistent data are available to support decision making in accreditation, and so that the current emphasis on excessive documentation requested from and/or submitted by programs for accreditation purposes will be greatly reduced.

The proposed SSAP solution contains the following components:

1. Creating a Data Dashboard

2. CASE and CTC Online enhancements to improve user friendliness

3. CASE, CTC Online and FileMaker data model and data cleansing

4. Web broadcasting equipment upgrade for providing end user training

5. Security enhancements – replace network security device F5

6. Security enhancements – User authentication for CTC Online for educators

7. Successful upgrade or migration of the CTC WWW site

8. Backup recovery system for all of the Commission's critical applications

Creating the data dashboard will be accomplished through the implementation of business intelligence (BI) software.

The additional solution components involve functional and security enhancements to existing systems, developing a more robust data model and cleansing existing data, and utilizing OTech services for CTC WWW site hosting and technology recovery. CTC will utilize contractors for development of system enhancements and the improved data model.

All eight of these components are necessary in order to ensure the success of the SSAP project, and ensure successful implementation of the improvements needed for the Accreditation system.

In order for a data dashboard to be useful, it must have reliable, up to date data, all personably identifiable information (PII) must be completely secured, and the system must be reliable and have appropriate recovery in the case of disaster.

Components 1,2,3 and 7 above are necessary to provide reliable, up to date data, data will be gathered through the Commission's website to access CTC Online and program completer surveys. It is important that the system be simple to use and very clear, so that the Commission collects accurate data. The Commission's current website is several versions behind the current state template; thus the way the current website is laid out is sometimes confusing to educators on what type of credential they are qualified for and what they need to do in order to be qualified for the credential that they want. Moving to the new state templates and using CalTech's content managed system web site offering allows the Commission to improve its layout of credential and accreditation information thus providing more accurate data being entered into the Commission's data systems. It is of the upmost importance that the SSAP system to have accurate data, if the data is not accurate the system is worthless.

Component 4 above is necessary for the success of the project, in order for the Commission to be able to provide the training that will be necessary for researchers outside of the Commission, to utilize the accreditation data dashboard properly for their research. To provide comprehensive training that walks through how to use the data dashboard requires this training to be conducted using a web broadcasting system. The training will need to be interactive and take questions from the trainees. The Commission's current web broadcasting system is nine years old and has become very unstable. The Commission does not have current funding that allows for the replacement of the system, it is very unlikely that the current system will be available for providing the training that is needed for the success of this project.

Component 5 and 6 above are necessary in order for the Commission to keep the PII data secure. The commission utilizes an F5 for network security and to ensure that due diligence is done to prevent a security breach. The current F5 is now five years old and is in need of being replaced to continue to provide the network security necessary; additionally the introduction of a data dashboard that utilizes PII data to provide aggregated data creates another possibility for a security breach, and raises the public awareness of the PII data that the Commission has on its computer systems. The new F5 will have more capacity to handle running more security modules such as Access Policy Manager (APM), this will provide the increase security needed for users using an automated system to create userid's and passwords. Without replacing the F5 the Commission will be open to more risk and potentially have degraded services due to increase traffic from the data dashboard. The Commission does not currently have the funding that allows for the replacement of the F5 equipment.

Component 8 above is necessary because the Commission does not currently have a backup recovery system, having critical systems in a TIER III data center is a requirement of the state. This new accreditation system is critical for the Commission and stakeholders to make critical well-informed decisions. In order for the system to be available in the event of a disaster, the data dashboard and the data it uses must be in a TIER III data center. Currently in the case of a disaster, the Commission's critical systems would be down for several months, since the Commission would have to secure a facility, procure and install the hardware and restore from offsite tape backup. With this solution the Commission critical applications would be back up and running within a day or two. This will not replace the need for offsite tape backup since there is some Commission data that is not part of a critical system and needs to be backed up and kept offsite. The Commission currently receives no funding for a backup recovery system.

5.1   Solution Description

1. **Hardware:**

SSAP Solution Component	Hardware Required
Creating a Data Dashboard	This is going to require a server and storage. Because of the analytics that are going to be done on the fly by public and internal users the system must be a high end server; and have plenty of storage to provide for storing all of the different data sources and the results of the user queries into the data.
CASE and CTC Online Enhancements to Improve User Friendliness	No hardware is needed for this task.

SSAP Solution Component	Hardware Required
CASE, CTC Online and FileMaker Data Model and Data Cleansing	No hardware is needed for this task.
Web Broadcasting Equipment Upgrade for Providing End User Training	Replace all outdated web broadcasting equipment. The current hardware for web broadcasting has become unstable and unsupported (Windows XP and Windows server 2003),
Security Enhancements – Replace Network Security Device F5	Replace the F-5 with a new state of the art F-5. This equipment is needed to continue to ensure that the Commission is taking all of the needed precautions to do due diligence to prevent any kind of data breach.
Security Enhancements – User Authentication for CTC Online for Educators	No hardware is needed for this task.
Successful Upgrade or Migration of the CTC WWW Site	No hardware is needed for this task. The Commission is planning on moving our WWW site to OTech's hosted site.
Backup recovery system for All of the Commission's Critical Applications	This is going to require an estimated ? servers and storage for all of the data, see attached ? for details. The Commission is planning on using OTech Tenant Managed Services (TMS) for our backup recovery system. The Commission will need two racks to store all of the equipment. The Commission is planning on using the existing F-5 security device for the backup recovery system.

2. Software:

SSAP Solution Component	Software Required
Creating a Data Dashboard	The Commission is going to need COTS business integration software to create data dashboard. The software must meet the following requirements: • The system must run on Windows Server • The system must work with Oracle databases, ODBC compliant (FileMaker databases), Excel files and CSV files. • The system must be a very user friendly interface for both internal and public end users. • The system must be able to display data in several different GUI interfaces, including but not limited to multiple graphs, mapping graphics, and be able to display data in table format. • The system must be able to allow internal and end users to query the data and drill down in the data to help provide answers to specific questions they may have. • The system must be able to report PII data on an aggregate level and not allow the individual data to be seen by the public. • The software must be well established software and have regular patches and updates.

SSAP Solution Component	Software Required
	• The software must be rated in the "magic quadrant" by technology research firms such as Gartner.
CASE and CTC Online Enhancements to Improve User Friendliness	No new software is needed for this task. CASE and CTC Online are running on an Oracle database with a Siebel CRM front end system. Oracle runs on Oracle Linux and Siebel runs on Windows server.
CASE, CTC Online and FileMaker Data Model and Data Cleansing	No new software is needed for this task. CASE and CTC Online are running on an Oracle database with a Siebel CRM front-end system. Oracle runs on Oracle Linux and Siebel runs on Windows server.
Web Broadcasting Equipment Upgrade for Providing End User Training	Windows server 2012, Window 7, and Polycom web broadcasting software.
Security Enhancements – Replace F5	No new software is needed for this task.
Security Enhancements – User Authentication for CTC Online for Educators	No new software is needed for this task. This enhancement will be built using Siebel's built in user authentication software.
Successful Upgrade or Migration of the CTC WWW Site	No software is needed for this task. The Commission is planning to move our WWW site to OTech's hosted site.
Backup recovery system for All of the Commission's Critical Applications	This is going to require the attached list of operating systems and software licenses. Some of the systems will be cold off site backup systems and will not require software licenses, such as Oracle, Siebel and the data dashboard software. The Commission is planning on using OTech Tenant Managed Services (TMS) for our backup recovery system. The Commission will need two racks to store all of the equipment. The Commission is planning on using the existing F-5 security device for the backup recovery system.

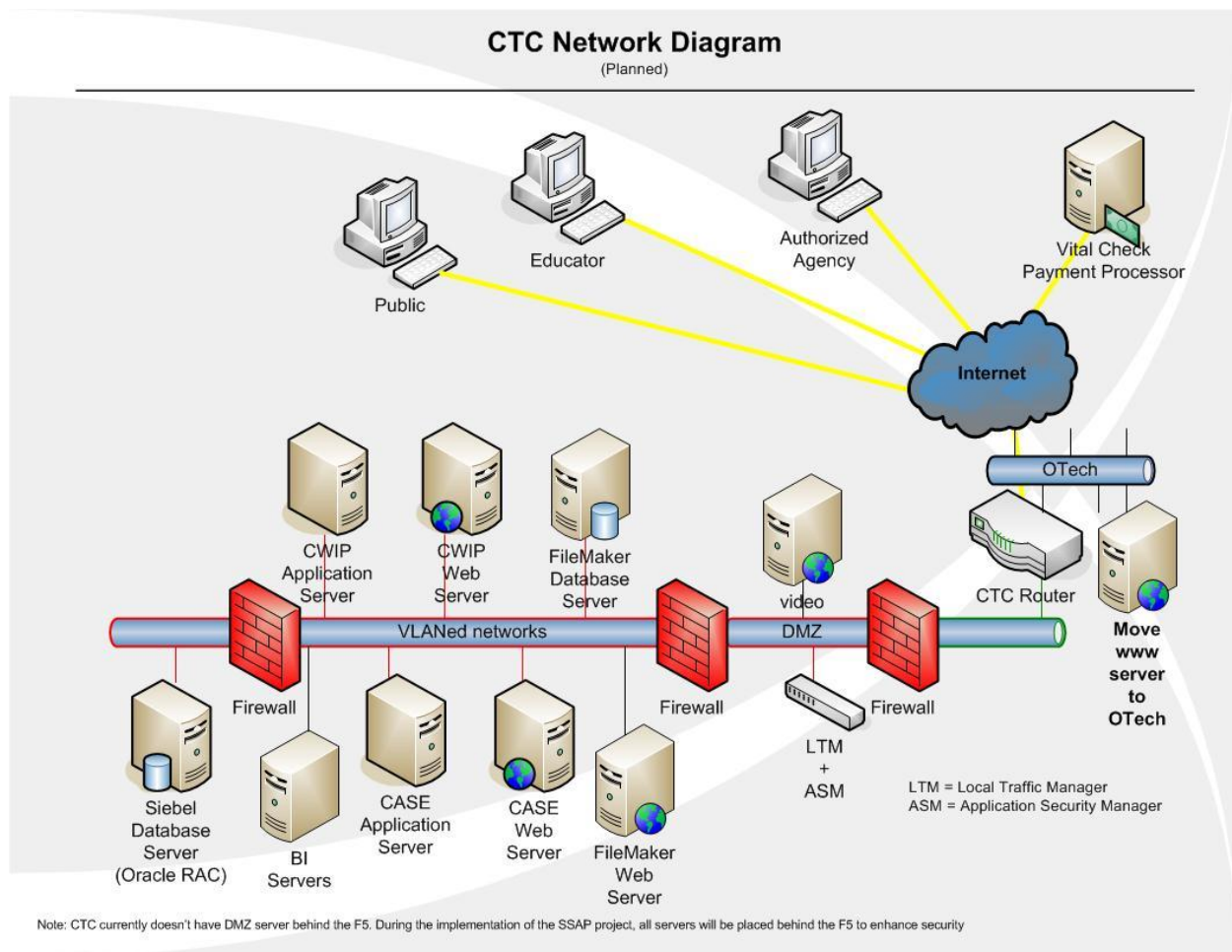### 3. Technical platform:

The proposed solutions will operate on the same technical platform as current systems, with the exceptions as noted in the above hardware and software sections. The following diagram illustrates the planned infrastructure for the Commission's accreditation system:

CTC Network Diagram
(Planned)

Note: CTC currently doesn't have DMZ server behind the F5. During the implementation of the SSAP project, all servers will be placed behind the F5 to enhance security

4. Development Approach:

Use the check boxes below and additional narrative to explain how the Agency/state entity plans to develop the proposed system in terms of percentages of Customer off the Shelf System (COTS), Modified off the Shelf System (MOTS), or Custom Development. Select and estimate percentage of each.

☐ COTS %? ☐ MOTS %? ☐ Custom Development % ☐ Others ☐ None ☒ See below

SSAP Solution Component	Development Approach
Creating a Data Dashboard	COTS 100% There will be considerable configuration and setup of the data dashboard system needed to work with all of the Commission's data systems. Also there will need to be data dashboards built for the end users to use.
CASE and CTC Online Enhancements to Improve User Friendliness	MOTS 100% This will be accomplished using a contracted Siebel application developer and in house state staff developers.

SSAP Solution Component	Development Approach
CASE, CTC Online and FileMaker Data Model	COTS 100% This will be accomplished using a contracted Data Modeling consultant. The data modeler will use the Commission's standard Microsoft Office suite and Microsoft Visio applications.
CASE, CTC Online and FileMaker Data Cleansing	MOTS 100% This will be accomplished using a contracted Siebel application developer, contracted Oracle Database Administrator, in house state staff developers and in house state staff data base administrators. All FileMaker data cleaning will use in house state staff developers.
Web Broadcasting Equipment Upgrade for Providing End User Training	MOTS 100% This task will be accomplished using Polycom's web broadcasting system and modifying to work with the Commission's conference room.
Security Enhancements – Replace F5	Other 100% Installation and setup will be included in the price of purchasing the new F5 equipment.
Security Enhancements – User Authentication for CTC Online for Educators	MOTS 100% This will be accomplished using a contracted Siebel application developer and in house state staff developers.
Successful Upgrade or Migration of the CTC WWW Site	Other 100% The Commission would hire a contractor to upgrade and migrate the CTC WWW website to OTech's hosted content management system website utilizing Sitecore Technologies and the latest state templates.
Backup recovery system for All of the Commission's Critical Applications	The Commission is planning on using OTech Tenant Managed Services (TMS) for our backup recovery system.

5. Integration Issues:

SSAP Solution Component	Integration Issues
Creating a Data Dashboard	The business intelligence contractor and Commission staff will work together to ensure that all of the data from all of the different systems work seamlessly together. This system will use data from Oracle, FileMaker, Excel and CSV files.
CASE and CTC Online Enhancements to Improve User Friendliness	These tasks will not change any interfaces that they work with, but thorough testing will need to be completed to ensure that all of the existing interfaces continue to work.
CASE, CTC Online and FileMaker Data Model	This data model will be from all of the Commission's databases and data sources, Oracle, FileMaker, Excel and CSV files.
CASE, CTC Online and FileMaker Data Cleansing	The data cleansing will be cleansing all of the Commission's databases and data sources, Oracle, FileMaker, Excel and CSV files.
Web Broadcasting Equipment Upgrade for Providing End User Training	This will require integration of the new equipment with the Commission existing audio system and televisions for display in the room.

SSAP Solution Component	Integration Issues
Security Enhancements – Replace F5	None.
Security Enhancements – User Authentication for CTC Online for Educators	This will be accomplished using Siebel, no integration.
Successful Upgrade or Migration of the CTC WWW Site	There will be no integration but there will be a migration from the CTC WWW website to OTech's hosted content management system website utilizing Sitecore Technologies and the latest state templates.
Backup recovery system for All of the Commission's Critical Applications	None The Commission is planning on using OTech Tenant Managed Services (TMS) for our backup recovery system. Data will be transferred via virtual backup to OTech nightly.

6. **Procurement Approach:**

Procurement of services to develop and implement the SSAP solution will follow Department of Technology (CalTech) Statewide Technology Procurement Division (STPD) procedures. Contracts will be awarded to the vendors with relevant experience in implementing systems of similar size and scope. The Commission will utilize a MSA or a RFP will be issued to solicit vendor proposals for the new SSAP solution project for Oracle and Siebel enhancements. RFO's will be issued to solicit vendors proposals for the new SSAP solution project for the new accreditation data dashboard and the upgrade or migration of CTC's website. Any contract services will be procured using an agreed upon procurement vehicle/mechanism between CalTech's STPD and the CTC, to ensure alignment with procurement guidelines in GC section 19130.. The current estimated procurement schedule is outlined as part of the Project Management Plan presented in Section 6 of this report.

The Commission needs the following contracts because it does not have the in house expertise and available resources needed to complete the tasks as outlined in the project schedule in section 6.

As the expected size of these contracts is outside of the Commission's normal IT purchasing delegation, the Commission anticipates working closely with the CalTech STPD through the procurement process.

The Commission is committed to its procurement goals of selecting bids resulting in 25 percent being SB vendors, and 3 percent being DVBE vendors. When possible, the Commission will attempt to select these vendors during the invitation for bid/request for bid process, as well as the bid award process, as referenced in the State Contracting Manual Volume 2, Chapter 3.

a. Proposed Prime Vendor Procurement Vehicle(s)

☐ IFB ☐ RFI ☐ CMAS ☐ MSA ☐ IFB ☒ RFO ☒ RFP/MSA ☐ Others ☐ None

Procurement Descriptions for the following Contracts for the SSAP Project

Contract Title	Type of Contract	Contract Est. Award Date	Contract Est. Completion Date	Procurement Evaluation Method	Maintenance Period
Creating a Data Dashboard for Accreditation	RFO	10/22/2015	6/30/2017	Best Value	None
CASE and CTC Online Enhancements	RFP/MSA	1/5/2016	6/30/2017	Best Value	None
Successful Upgrade or Migration of the CTC WWW Site	RFO	10/16/2015	6/30/2016	Best Value	None

b. Proposed Prime Vendor Contract Type

☐ Fixed Price ☒ Time and materials ☐ Percentage of Benefit ☐ Other

The Commission believes the most efficient and effective means to procure services is using a time and materials contract. This provides sufficient oversight by the Commission and other control agencies, while allowing the Commission to build in some flexibility so that time or resources from tasks that are less time/resource consuming can be re-allocated to more consuming tasks, or even result in some savings.

7. Technical Interfaces:

External interfaces include:

- Department of Social Services – child support information
- Clearing House (NASDTEC) – interstate offenders information
- National Education Systems (NES) – testing data
- Education Test Services (ETS) – testing data
- U.S. Department of Justice – DOJ and FBI clearance and arrest data
- Districts, Counties, Institutions – credentials and correspondence
- U.S. Postal Service – postal directory
- SB1666, Teaching Fellowship Program – program participant data – not currently active
- SB395, Certificate for Staff Development – Certification Data
- CDE – Decile and CalPads data that we currently get for T2 and TSR report

Internal interfaces include:

- Moving Data from CASE to FileMaker for program completer surveys.

8. Accessibility:

Accessibility for the proposed solution will conform to State SAM and SIMM guidelines and CTC standards for accessibility, based on standards defined by section 508 of the U.S. Rehabilitation Act (part of the Americans with Disabilities Act).

9. Testing Plan:

The CTC and the contract vendor will design testing plans and conduct testing phases to ensure the accuracy, completeness, and robustness of the system. As modules and system enhancements are completed, a thorough testing of functionality will be performed. A test plan will be developed and executed according to ETSS's application development approach, to include the following elements:

■ Unit testing: Test that each application unit performs as designed

■ System testing: Test that system components work together as designed

■ Migration testing: Test that data integration conforms to data elements mapped to the new Data Model as well as conforms to ETSS spatial and relational data standards.

■ User acceptance testing: Users test the system to ensure it meets the business functions as identified in the system requirements.

The testing plan must be developed and conform to the business requirements as defined in this FSR and any resultant RFP/MSA documents. The user-testing group will include subject matter experts from the CTC program areas and specific stakeholder groups, e.g., credentialing institutions and programs.

There are no significant known issues regarding the proposed testing phases for the SSAP solution effort.

Unit Testing Phase
The development team will test each phase of the business processes and systems functions developed for the SSAP solution. Unit testing is defined as the verification of the accuracy and completeness of the individual processes, programs, modules, objects, functions, and procedures that make up the system.

System Testing Phase
System testing will be conducted to verify that the SSAP solution works correctly and integrates with CASE and CTC Online.

User Acceptance Testing Phase
User acceptance testing includes providing the user testing group access to test data to determine the usefulness and accuracy of the data entry and reporting features of the system.

The users perform their normal business processes using the system to identify problems that may exist during actual production execution. User acceptance testing is also helpful in identifying business process problems that may occur when the system is used differently than documented in the specifications.

10. Resource Requirements:

One Time Contracted Technical Staffing Needs

CTC will also require consulting resources to provide technical assistance and expertise for the following:

- Install and configure the data dashboard software and customize the dashboard design and reports

- Develop a more robust data model to accommodate additional data elements and perform data cleansing

- Enhance the current CASE and CTC Online systems to increase user friendliness and accommodate additional data elements

- Develop and migrate the Commission's WWW site.

Two positions (one Consultant in Teacher Preparation (Program Evaluation and Research) and one Associate Governmental Program Analyst (AGPA)) in the Professional Services Division would be responsible for the overall implementation of one-time work associated with oversight of data collection, providing technical assistance, and analyzing submitted data. There would also be ongoing work associated with collecting, analyzing, and reporting on information collected and making the information available to stakeholders. Additionally, in order to support the revision and augmentation of the data systems, two positions (one Staff Programmer-Analyst and one Staff Information Systems Analyst) would also be required to help build, implement, and ultimately administer and maintain the information technology capacity described in this proposal.

Current revenue constraints will require the Commission to absorb ongoing staffing needs that result from the SSAP project; the Commission will manage the system's ongoing staffing needs by reprioritizing workload and redirecting staff. The following changes will most likely need to occur in order for the SSAP project to be kept on schedule, and continue to be enhanced and maintained in ongoing years. After implementation of the SSAP project the Commission will then reevaluate its priorities and funding condition.

- Reduce non-critical new policy work to implement, maintain and enhance the Accreditation Data system.

- Postpone the 2015-16 Program Assessment activities until 2016-17.

- Reduce all non-essential presentations to stakeholder organizations — PASSCo, CDE, SELPAs, CAPSE, CAPEA, CCTE, CSU, AICCU, UC, CCSESA…

- Suspend Indefinitely "Statistic of the Month" starting July 1, 2015.

- Where possible reduce technical assistance activities to Commission-approved institutions.

- Significantly reduce attendance by PSD's consultant staff at any conferences, meetings, or professional development between starting July 1, 2015.

- Response time for data requests may increase—the staff who work with data will be very involved in the Accreditation Data System so requests from other agencies and individuals will take longer to provide the data.

- Eliminate the routine courtesy read (and provide feedback) of an institution's Common Standards, prior to accreditation site visits.

- Information Technology - the amount of overtime that is utilized by the IT staff will need to increase in order to ensure that all IT systems are maintained and secured.

- IT staff will be slower to respond to IT help desk questions for Commission staff and end users of the CTC Online systems.

Professional Services Division Ongoing Staffing Needs

While a major goal of the proposed data system is to streamline the accreditation system, it is also to *strengthen* the system by enabling the Commission to use data to make more reliable and valid accreditation decisions and providing clear and meaningful information about the quality of educator preparation to the public and policy makers. To accomplish these twin goals, the Division will:

- Maintain current research staff who currently develop data reports (legislatively mandated reports i.e., Title II, Teacher Supply Report, other Commission reports, as well as ad hoc data requests). The increased technology should allow these staff to spend less time pulling data from disparate sources and developing reports and reallocate that time to developing more data-driven reports for the commission, policy makers, and the public.

- Maintain current staffing for review of Biennial Reports. Requiring programs to annually provide specified outcome data will enable the Commission to shift the reporting of how programs use the data from a biennial to a triennial process, which will result in a slight reduction (30%) in the staff time necessary for review of Biennial Reports because of reduced frequency, but because of increased scrutiny on the data and the additional data elements there is no reduction in staff.

Information Technology Ongoing Staffing Needs

CTC will need to support, maintain and make continuous improvements to the new data dashboard, the enhancements to CASE and CTC Online, the security enhancements, and the off-site backup recovery system. This is all new work and equipment that needs to be supported and maintained.

- Data Dashboard – this includes new equipment, new software, and some new data. IT staff will be required to program this system for continuous improvement, maintain the hardware and software and keep the data secure. If there is no staff to maintain and continue to improve the data dashboard system will become stale and not provide the data analysis tool that is needed for making critical Accreditation decisions.

- CASE and CTC Online support is already funded, but this is adding new functionality, such as a userid and password for all educators using CTC Online to access their data, apply for Credentials and renewing their Credentials. This means that the Commission will have over a million new userid's and passwords to issue, monitor and maintain.

- Security Enhancements –
  - The Commission will be need to aggregate PII data for the data dashboard to ensure that no PII data is visible via the public side of the data dashboard.

- o The Commission is also installing a newer F5 security device and will need to utilize more of its security functions. This will require more staff time to maintain and monitor to ensure there are no security breaches.
- Backup Recovery System – This is all new for the Commission, currently the only backup the Commission has is the on-site virtual and tape backup of all of the data and a secure tape backup copy offsite. Creating a complete off-site backup recovery system for all of the Commission's critical and web facing applications is critical for the Commission, but if there is no staff to maintain, test and keep the system up to date it will become worthless in a disaster.

11. Training Plan:

The implementation of the SSAP system will require training for CTC program staff to use the dashboards and enhanced reporting capabilities of the system, to run ad hoc queries to meet stakeholder requests and to analyze data for purposes of accreditation. CTC technical staff will require training to support the system and to assist with the most complex data submission issues.

Staff at 260 Commission-approved institutions and entities that sponsor credential programs that prepare educators will also need training to understand how to submit the data. Staff in the local education agencies will need training to understand how to submit data related to their employees.

State staff will be responsible for developing the training plan, developing training materials, and conducting training via webcasts for these end users. The CTC envisions housing a web-based seminar on the Commission's website for users to access for initial and refresher training, and envisions requiring program sponsor staff to take the training in order to recommend candidates for credentials. The web-based training will include step-by-step assistance through the use of guides and webinars. This feature will facilitate the use of the application without the need for in-depth, in-person training sessions. For the public, a simple, step-by-step set of instructions will need to be developed and available on the Commission's web page.

All necessary documentation for external end-users to be able to effectively utilize the application will be available online. In addition, as the system is implemented and questions are gathered, staff will develop Frequently Asked Questions and a follow-up webcast with additional information.

12. On-going Maintenance:

SSAP Solution Component	On-going Maintenance

SSAP Solution Component	On-going Maintenance
Creating a Data Dashboard	The Commission is requesting two new IT positions to continue to support this system once it is implemented. The Commission's Professional Services Division is also requesting two new positions to do data research and keep dashboards up to date as well as create new dashboards. Costs for this are in the EAWs and an attached spreadsheet has more details on the positions duties. The Commission is also requesting funding to support the hardware and software. The software will be on ongoing maintenance. The hardware will need to be maintained for 5 years and then refreshed every 5 years. Costs for this are in the EAWs.
CASE and CTC Online Enhancements to Improve User Friendliness	These updates to the system will not require any new hardware or software maintenance and support of the systems will continue to be accomplished by IT state staff.
CASE, CTC Online and FileMaker Data Model	Commission IT staff will maintain the Data Model and keep it up to date.
CASE, CTC Online and FileMaker Data Cleansing	Commission IT staff will maintain and perform any future data cleansing needed.
Web Broadcasting Equipment Upgrade for Providing End User Training	The Commission is requesting funding to support and maintain the web broadcasting hardware and software.
Security Enhancements – Replace F5	The Commission is requesting funding to support the F5 hardware. The hardware will need to be maintained for 5 years and then refreshed every 5 years. Costs for this are in the EAWs.
Security Enhancements – User Authentication for CTC Online for Educators	These updates to the system will not require any new hardware or software maintenance and support of the systems will continue to be accomplished by IT state staff.
Successful Upgrade or Migration of the CTC WWW Site	These updates to the system will require a subscription to OTech's hosted content management system website utilizing Sitecore Technologies and the latest state templates. Costs are unknown at this time but an estimate is included in the EAWs. Commission staff will maintain all of the content of the system.
Backup Recovery System for All of the Commission's Critical Applications	The Commission is requesting funding to support the hardware and software for a backup recovery system. The software will be on ongoing maintenance. The hardware will need to be maintained for 5 years and then refreshed every 5 years. Costs for this are in the EAWs.

13. Information Security:

The following security enhancements must be included as part of the proposed solution:

■ Replace the current F-5 with a new state of the art F-5. This will continue to ensure that CTC is taking all of the needed precautions to prevent any kind of data breach.

■ Move away from educators needed to use their social security number (SSN) and date of birth (DOB) for logging into CTC Online in order to view or renew their credential or apply for

a credential. This data is considered Personally Identifiable Information (PII) data, and decreasing the use of this data enhances security.

The proposed solution must conform to the Commission's Computer Security and Usage Policies as well as all applicable State information technology policies (e.g., SAM, SIMM, NIST, etc.).

14. Confidentiality:

Confidentiality requirements associated with the information processed and maintained by the proposed system are the same as what is required for the current system. The same measures that are used today will be used to meet these requirements in the proposed system. The legal and public policy constraints include the Information Practices Act, the Public Records Act, and the State Records Management Act as applicable to the Commission. In addition, there are also sections of the Education Code that are applicable to the Commission's records (sections 44230, 44248, and 44341).

The system will have both individual and aggregate data. Each individual's data must be kept confidential except for the data elements identified in Education Code §44230(a)(1). Aggregate data will be used on program, institution, and state dashboards for public review.

15. Impact on end users:

The end users of the SSAP solution include CTC staff, staff at Commission-approved institutions and entities that sponsor credential programs, staff in the local education agencies and the general public. This proposed solution will provide public access to credentialing information and minimize the use of paper submissions to make accreditation decisions through the use of a web-based portal. Institutions and programs will be able to submit data for centralized data collection and analysis and the solution will give the public searchable access to this data. End user will have to reports to use for program improvement and for making accreditation decisions.

16. Impact on existing system:

The Commission's current data systems will be enhanced to provide more accurate and easier to analyze data, which will be used by the new data dashboard system and result in better data for decision making within the accreditation system and for meeting federal reporting requirements. The current method for doing mandated reported will need to be maintained until the data dashboard project is completed. Staffing for this is reflected in the staffing needs spreadsheet that is attached.

17. Consistency with overall strategies:

This proposal is consistent with the Commission's mission to ensure integrity, relevance, and high quality in the preparation, certification, and discipline of the educators who serve all of California's diverse students.

The proposed project aligns with the goals in the strategic plan **for Program Quality and Accountability** as follows:

- **Develop and maintain rigorous, meaningful and relevant standards** – The proposed solution will allow for an expanded and more robust data model that will allow for the capture of additional data elements needed to accommodate revised standards and expanded surveys.

- **Effectively and efficiently monitor program implementation and outcomes** – The proposed solution will help streamline and strengthen the accreditation process by focusing more on program outcomes, using common data elements to evaluate programs (e.g., surveys of graduates and employers, results of teacher and administrator performance assessments, rates of entry and retention in the profession), and to target investigations into areas of potential strength and concern in preparation.

- **Ensure effectiveness and efficiency of the Commission's accountability systems** – The accreditation system will be updated and streamlined to assure that it is focused on high leverage sources of qualitative and quantitative data about candidate and program outcomes.

The proposed project aligns with the goals in the strategic plan for **Communication and Engagement** as follows:

- **Maintain a clear and accessible web presence for ease of access to information** – The proposed solution will allow for increasing the amount and scope of publicly-available information about the quality and outcomes of preparation programs to increase transparency within the Accreditation System, using, for example, a data dashboard for each accredited program that would contain a variety of data elements from multiple sources.

18. Impact on current infrastructure:

Refer to items #7 and 10 above.

19. Impact on data centers:

Only the two areas below will have any impact on the OTech's data center:

- **Successful upgrade or migration of the CTC WWW site**

  These updates to the system will require a subscription to OTech's hosted content management system website utilizing Sitecore Technologies and the latest state templates. Costs are unknown at this time but an estimate is included in the EAWs. Commission staff will maintain all of the content of the system.

- **Backup Recovery System for All of the Commission's Critical Applications**

  The Commission is planning on using OTech Tenant Managed Services (TMS) for our backup recovery system. The Commission will need two racks to store all of the equipment. The costs are included in the EAWs.

20. System Hosting/Data Center Consolidation:

Use the check boxes and describe the entity planned to host the system.

☐ OTech Managed Services ☒ OTech Federated Data Center ☒ Agency/state entity

☐ Outsourced/Other _____

The Commission is not part of the State of California's Executive branch and thus is not required to host the Commission's systems at the OTech data center.

SSAP Solution Component	System Hosting/Data Center Consolidation
Creating a Data Dashboard	This system will be hosted at the Commission's data center. This system will be interacting with several of the Commission's databases and analytics that are going to be done on the fly by public and internal users of the system and thus it must reside in the same data center as these systems. A backup data dashboard system will be housed at OTech's utilizing their tenant managed services.
CASE and CTC Online Enhancements to Improve User Friendliness	These systems will continue to be hosted at the Commission's data center. Both of these systems were granted an exemption from being hosted at OTech's data center. A backup of both the CASE and CTC Online systems will be housed at OTech's utilizing their tenant managed services.
CASE, CTC Online and FileMaker Data Model and Data Cleansing	Not Applicable
Security Enhancements – Replace F5	The new F5 will be at the Commission's data center the current F5 will go to the OTech data center in case it is needed for backup recovery.
Security Enhancements – User Authentication for CTC Online for Educators	Same as CASE and CTC Online Enhancements to improve user friendliness.
Successful Upgrade or Migration of the CTC WWW Site	The Commission is planning on moving our WWW site to OTech's hosted site.
Backup Recovery System for All of the Commission's Critical Applications	The Commission is planning on using OTech Tenant Managed Services (TMS) for our backup recovery system. The Commission will need two racks to store all of the equipment. The Commission is planning on using the existing F-5 security device for the backup recovery system.

21. Backup and operational recovery:

The Commission is planning on using OTech Tenant Managed Services (TMS) for our backup recovery system for all critical applications. All of the Commission's data will be transferred via virtual backup to OTech nightly.

22. Public Access:

The proposed solution will provide a publically accessible portal, using a web interface to access an interactive data dashboard, which will allow stakeholders to query accreditation data from multiple devices (e.g., personal computers, tablets and mobile phones) without manual intervention from CTC staff. The security enhancements included in the proposed solution, including an upgrade to F-5 and implementing login capabilities that do not use PII, will provide the necessary safeguards to ensure proper access to State databases.

5.2   Rationale for Selection

The accountability efforts are the top priority for the Commission and its Chair, Linda Darling-Hammond. The proposed system will allow data driven decision making for educator preparation program quality to be fully implemented. The enhanced accreditation system will use program and candidate outcome data to help the Commission to fully understand which programs are preparing effective educators and which are not.

Each year, the Commission processes nearly 250,000 applications/documents. Currently, there is no or minimal validation of documents processed. Data validation is done manually by 1 or 2 staff members with limited timeframe. Since data resides in multiple databases and in multiple formats, fixing data errors in one place does not carry throughout the data system.

If there is one comprehensive data system, data validation can be done automatically and appropriately. There will be efficiency in the form of staff time, and duplication of staff effort will be reduced.

The Commission used the criteria in the table below (SSAP Data Dashboard Selection Criteria) to choose the business intelligence (BI) tool for creation of the data dashboard. The chosen product meets or exceeds all of the Commission's requirements and is rated high in the magic quadrant according to Gartner (see link below). The chosen product is also the most used BI product by education entities that the Commission works with. One of the Commission's site visit leaders, who has served on over 20 accreditation site visits during the past decade, finds the chosen product to be the best data management system for ease of use.

Gartner Research
http://www.gartner.com/technology/reprints.do?id=1-1QLGACN&ct=140210&st=sb

SSAP Data Dashboard Selection Criteria	Product 1	Product 2	Product 3
Mandatory Requirements	x	x	x
The system must run on Windows Server	x	x	x
The system must work with Oracle databases, ODBC compliant (FileMaker databases), Excel files and CSV files.	x	x	x
The system must be able to display data in several different GUI interfaces, including but not limited to multiple graphs, mapping graphics, and be able to display data in table format.	x	x	x
The system must be able to allow internal and end users to query the data and drill down in the data to help provide answers to specific questions they may have.	x	x	x
The system must be able to report PII data on an aggregate level and not allow the individual data to be seen by the public.	x	x	x
Rated Requirements	**Product 1**	**Product 2**	**Product 3**
The system must be a very user-friendly interface for both internal and public end users.	2	4	5

The software must be well-established software and have regular patches and updates.	5	2	5
The software must be rated in the "magic quadrant" by technology research firms such as Gartner	4	0	5
The software has a large install base with State of California agencies and Local Education Agencies	4	0	5
The overall cost of the system including both one time and ongoing	1	4	4
Total Score	**16**	**10**	**24**

5.3 Other Alternatives Considered

The Commission has considered two alternatives:

1. Develop reports using existing reporting software (Crystal Reports).

2. Do nothing – maintain status quo.

5.3.1 ALTERNATIVES #1 – DEVELOP REPORTS USING EXISTING REPORTING SOFTWARE

The Commission can continue to do the reports manually and publish in PDF. The Commission can develop some canned reports using existing reporting software (e.g., Crystal Reports) and publish reports on the Commission's website. This alternative would require enhancements to systems, data model, website, security and backup recovery similar to what is included in the proposed solution. The main difference would be that Crystal Reports would be used to post reports to the portal and there would not be an interactive data dashboard.

The alternative solution contains the following components:

- Additional reporting using Crystal Reports

- CASE and CTC Online enhancements to improve user friendliness

- CASE, CTC Online and FileMaker data model and data cleansing

- Web broadcasting equipment upgrade for providing end user training

- Security enhancements – replace network security device F5

- Security enhancements – User authentication for CTC Online for educators

- Successful upgrade or migration of the CTC WWW site

- Backup recovery system for all of the Commission's critical applications

The following reports can be generated and published on the website:

- Number of teaching credentials issued – statewide Report (current year)

- Number of teaching credentials issued, statewide report – 5-year Report

- Number of Teaching Credentials Issued, statewide report – 10-year Report

- Number of Teaching Credentials Issued by Recommending Agency - current year

- Number of Teaching Credentials Issued by Recommending Agency – 5-yr report

- Number of Teaching Credentials Issued by Recommending Agency – 10-yr report

- Number of Teaching Credentials Issued by Subject Area – current year

- Number of Teaching Credentials Issued by Subject Area – 5-yr report

The Commission started to post data in user-friendly format (e.g., excel files). The Commission can continue to post data in excel files so that public (researchers, media, teacher preparation community) can download excel files to do their own analysis.

Advantages to creating canned reports using Crystal Reports:

- The reports will be readily available so that staff does not have to spend time in analyzing data and generating individual report for each data request.

- Updating each year will be simpler and easier once the first set of reports are generated.

- The canned reports should have the flexibility for the public (to download the data in excel, or .csv files).

Disadvantages to creating canned reports using Crystal Reports:

- End users can't do their own analysis - reports will be static, can't generate reports on the fly.

- End users can't drill down data for specific year, etc.

- If the canned reports do not meet the needs of public, staff still needs to develop specific reports for the public.

- If the canned reports are generated/published in PDF, may not fulfill the needs of the public.

- Additional staff will need training in Crystal Reports - estimate 3-4 staff members.

- Additional staff will be required to run the reports - 4 from PSD and 4 from ETSS.

- Using Crystal Reports with the current data will not increase the reliability and consistency of the data. The reports will be based on a wide range of institutional data rather than uniformly collected, consistent data.

- Trying to increase the focus on outcomes data by using Crystal Reports would require significantly more staff - 4 PSD plus 4 ETSS staff - and not ensure that consistent data is collected.

5.3.2 ALTERNATIVES #2 – DO NOTHING

If there is no comprehensive data system, staff will continue to do data validation manually, and ensure that data is presented correctly and consistently in all reports. This is an expensive alternative in the form of staff time.

Currently, there is no automatic way to produce annual reports that are State or Federal mandated. Each report is analyzed and reported manually. The final reports are published in

PDF format making the reports unusable for end users. Ad hoc reports are published in PDF or excel format for individual requests, and stored in the PSD Shared Folder. Retrieval of past reports can be challenging. A comprehensive data system with relevant software by which the end users can drill down the data and do their own analysis is helpful.

Advantages to doing nothing and maintaining the status quo:

- None.

Disadvantages of doing nothing and maintaining the status quo:

- **Lack of a Data Dashboard** - The Commission does not have a Data Dashboard where the public (potential teacher candidates, parents, teacher preparation community, researchers, media, legislature, etc.) can access data for various purposes.

- **Data not available in the right format for public access** - Commission staff receives several ad hoc requests for data per year. Some data requests take minimal effort on the part of Commission staff and some data requests require several days of full staff time. Some reports require special programming to view data across multiple years and data sources. On average, Commission staff receives 1-2 custom report requests from the media, legislative staff, advocacy groups, governor's office, Dept. of Finance, CDE, and the public each month.

- **Data availability is limited to Reports (PDF)** - Commission staff publishes several annual reports in PDF that are either State mandated or Federal mandated. Data is constructed in tables within the PDF report; therefore, they are limited and not available in a user-friendly format.

- **Title II data collection and impact of new regulations for future data collection** - Title II data collection and reporting is a Federal mandate for which all teacher preparation programs have to submit data such as admission requirements, enrollment, program completers by academic major, program completers by subject area, pass rate for each assessment. Teacher preparation programs submit data to the State exam contractor, Pearson, and the Federal contractor, Westat, via website. In addition, Commission staff organizes data from CAS to fulfill the annual title II reporting. If all current data requirements and proposed data elements in the new regulations are collected in one database, that will be helpful for all teacher preparation community. Both individual-level reports as well as segment level (CSU, UC, Private/Independent), and statewide reports can be generated from the new and comprehensive database.

  - Current data resides in multiple databases, in multiple servers, in multiple formats –
  - Title II data (final data submitted to the USDOE) comes back to the Commission in excel file.
  - Data needed for Teacher Supply Report comes from the Commission's CAS and a smaller dataset is moved into a FileMaker for analysis/reporting purpose.
  - Accreditation data in multiple FileMaker Database; Program Sponsor data is in another FileMaker.
  - Survey Outcomes data are in multiple FileMaker databases.
  - Assignment Monitoring data are in multiple FileMaker databases.

Note: this alternative has the same costs as existing and thus the EAW's reflect the cost for this alternative under "Existing".

6.0 Project Management Plan

6.1 Project Organization

SSAP Project Organization Chart:
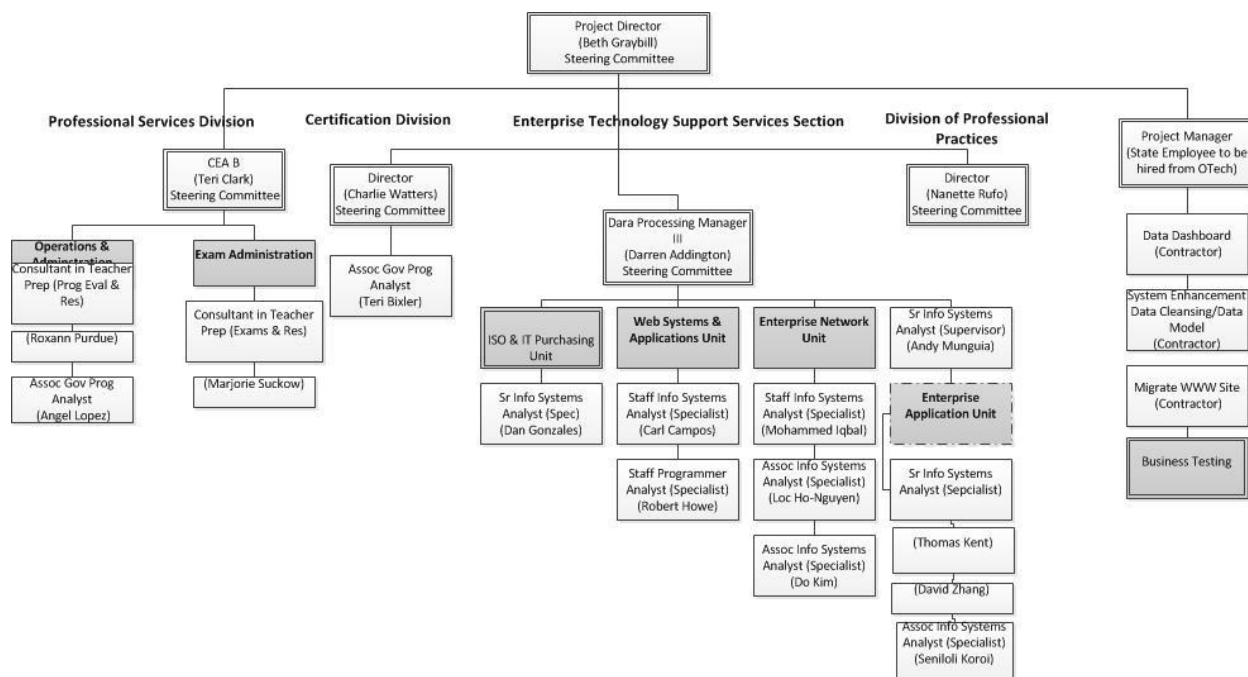
6.2 Project Plan

6.2.1 PROJECT MANAGER QUALIFICATIONS

Since the Commission does not have a project management office or a designated project manager, the Commission will be hiring a certified project manager form CalTech.

The person responsible for expanding the SSAP project must have the appropriate skills, education, experience, and knowledge to lead the efforts from analysis through implementation. Specifically, the project manager must meet the following minimum qualifications:

- Previous experience developing IT project plans

- Knowledge of team leadership principles

- Ability to work with other organizations in order to establish a process for sharing data

- Knowledge of techniques for quality assurance and risk management

- Conflict resolution skills and related experience with stakeholders, vendors, and staff

- Knowledge of IT project management and execution methodologies such as the Project Management Institute's (PMI) Project Management Body of Knowledge (PMBOK)

■ Experience working with and managing an outside application vendor

6.2.2 PROJECT MANAGEMENT METHODOLOGY

The commission will utilize project management best practices that include the use of the California Project Management Methodology (CA-PMM) for all system development work. Project management activities include:

■ Development of a project charter defining the project and roles and responsibilities

■ Defining activities and their sequence

■ Development of a project schedule and budget

■ Resource, quality, and configuration planning

■ Development of business and technical requirements

■ Risk and change management

■ Ongoing performance review, corrective actions, and project plan updates

■ Monitoring planned versus actual performance, schedule, and budget

■ Ongoing quality assurance and documentation

■ User review and acceptance

■ Post Implementation Evaluation.

Additional project management activities are detailed below under Roles and Responsibilities.

6.2.3 PROJECT PRIORITIES

Listed below are priorities assigned to this project:

	Resources	Schedule	Scope
CONSTRAINED (Cannot change)	X		
ACCEPTED (Could be changed)		X	X
IMPROVED (Can Be Changed)			

■ Resources are constrained because there is no additional staff projected in the Commission's workplan that will be available to work on this project, and no additional funds available to procure resources other than the consulting resources already planned.

■ Although getting improvements made to the accreditation system is of vast importance, the project schedule could be delayed if necessary to provide a quality product.

■ Scope for the SSAP project also has some flexibility to allow for changes that would provide a quality product for improving the accreditation process.

6.2.4 PROJECT PLAN

This project will consist of those activities required to accomplish the proposed solution and implement a SSAP solution that would meet each of the functional requirements listed in Section 9 of this document. The scope includes:

■ Procure vendor contract services for data dashboard implementation, system enhancements and to develop and migrate the Commission's WWW site

■ Develop detailed business requirements

■ Develop detailed architecture, data, and application design

■ Create a data dashboard

■ Develop CASE and CTC Online enhancements to improve user friendliness

■ Develop CASE, CTC Online and FileMaker data model and perform data cleansing

■ Perform security enhancements – replace network security device F5

■ Perform security enhancements for user authentication for CTC Online for educators

■ Upgrade or migrate the CTC WWW site

■ Create backup recovery system for all of the Commission's critical applications

■ Develop system interfaces

■ Perform unit, system, migration and user acceptance testing

■ Perform the necessary training and knowledge transfer for users, the administrator, and maintenance support staff with regard to the SSAP application system

■ Develop system and user documentation

■ Perform migration of data to enhanced system

■ Perform implementation and production cutover

6.2.5 PROJECT ASSUMPTIONS

Major project assumptions include:

■ CTC will define the data schema, data standards and data interfaces necessary to implement the solution

■ Project funding will be available throughout the project lifecycle

■ Functional requirements will not substantially change during the project

■ Higher priority projects will not impact the schedule or resource requirements

■ The California Project Management Methodology (CA-PMM) will be utilized

■ A contract systems implementer and developers will customize the SSAP solution for and in collaboration with the Commission. The appropriate system implementation methodology

will be determined through joint discussions between CTC and the vendor, and will comply with CTC and State standards.

■ CTC technical experts will be available to participate in the project at appropriate phases

■ The procurement and contract execution process will occur in a timely manner to ensure that the project can be completed within the approved timeframes.

■ Negotiations with contractors will result in a budget similar to the estimates provided in this proposal

■ Program staff from CTC will 'take ownership' and 'buy into' the new system

■ The project will obtain Control Agency (Department of Finance and Department of Technology) approvals

6.2.6   PROJECT PHASING

The proposed SSAP project will employ a typical system project life cycle; it has been divided into the major phases based on the core solution development activities as well as project initiation and closeout. Each phase of the overall project is outlined in the table presented below.

Phase Overview	Deliverables
Phase I: Initiation	1. Project charter 2. Project Management Plans (PMP) 3. Project Schedule and State Resources
Phase II: Create Data Dashboard	Stage I: 4. Procure data dashboard solution vendor 5. Procure COTS BI software and hardware 6. Procure web broadcasting hardware and software 7. Planning for data dashboard implementation 8. Hardware & software installation 9. System configuration Stages I and II: 10. Dashboard and report design 11. Completed Functionality 12. System and User Acceptance Testing 13. Training and Outreach 14. Production Implementation 15. User and Maintenance documentation
Phase III: CASE and CTC Online Enhancements to collect Additional Data, Improve Data Accuracy and Security	Stage I: 16. Procure contractor for CASE, CTC Online and Data Cleansing 17. Completed data model 18. User authentication design and development Stages I and II: 19. Planning for system enhancements

Phase Overview	Deliverables
	20. Configure architecture & development environment 21. Design, including data mapping, screen designs, logical and physical data design, hardware and software architectures 22. Data cleansing, integration & normalization 23. Completed Functionality 24. System and User Acceptance Testing 25. Training and Outreach 26. Final data migration 27. Production Implementation 28. User and Maintenance documentation
Phase IV: Security Enhancements – Replace network security device F5	29. Procure enhancements vendor 30. Planning for security enhancements 31. Installation 32. Develop security enhancements 33. Security testing 34. F5 Implementation
Phase V: Upgrade/Migration of CTC WWW Site	35. Procure CTC WWW site vendor 36. Planning for CTC WWW site migration 37. Perform system upgrades 38. Migrate CTC WWW site to hosted OTech site
Phase VI: Backup recovery system for Commission's Critical Applications	39. Planning for backup recovery system 40. Build backup recovery system 41. Successful failover from CTC to backup recovery system
Phase VII: Closeout	42. Technical knowledge transfer 43. Administrative/contract closure 44. PIER Report

6.2.7 ROLES AND RESPONSIBILITIES

6.2.7.1 PROJECT SPONSORSHIP

Project Sponsorship requires the involvement of the Commission's Executive Sponsor and Steering Committee. During this project, the Executive Sponsor secures project funding, ensures the availability of project resources, and provides oversight of all project activities performed by State staff and contractors. The Steering Committee provides project guidance and assistance in resolving issues.

Role	Responsibilities
CTC Executive Sponsor	• Provides executive level leadership and guidance of the project • Secures project funding and ensures the availability of project resources • Participates in Steering Committee meetings that address key

Role	Responsibilities
	project milestones • Monitors project progress • Communicates project status to Directors and major stakeholders • Champions support for the project and markets its benefits • Provides direction on alternative strategies to accomplish project goals if risks/issues arise • Approves the project scope and approach
Steering Committee	• Guides the overall effort towards the achievement of its objectives • Attends and actively participates in Steering Committee meetings • Communicates project objectives and status to peers, colleagues, and staff • Provides direction and guidance to the development process • Provides input on development progress • Sets priorities of recommendations • Ensures support and buy-in for project recommendations in areas of influence • Assists the CTC Project Manager to resolve issues and remove obstacles

6.2.7.2   PROJECT MANAGEMENT

The project responsibility includes hands-on management of project component activities to mitigate changes to scope, budget, and resource requirements.

Role	Responsibilities
Project Director	• Helps coordinate work efforts that impact the project. • Resolves significant project issues. • Attends SSAP Project management team meetings. • Communicates project status to internal and external stakeholders as needed. • Reviews project deliverables • Elevates budget, schedule, and technical issues to the Executive Sponsor, as necessary
Project Manager CalTech	• Coordinates and oversees project activities. • Ensures that project work is completed according to schedule • Develops project management-related deliverables. • Serves as liaison between vendor and stakeholders. • Tracks and resolves project issues. • Ensures that issues and changes are documented. • Maintains the project work plan.

Role	Responsibilities
	• Institutes controls to determine adherence to the project work plan and schedule. • Develops and executes the risk management plan. • Reviews project deliverables. • Facilitates SSAP Project management team and stakeholder meetings. • Conducts project team meetings. • Prepares weekly project status reports. • Facilitates active and timely participation of program and technical staff for the duration of the project.

6.2.7.3   PROJECT DEVELOPMENT AND IMPLEMENTATION

Several teams will participate in the development and implementation of the SSAP Project components. These teams include a combination of contractor and State staff. A description of the teams follows.

Role	Responsibilities
Solution Provider Vendor for Data Dashboard	• Leads the overall design of the system • Evaluates changes needed to the current environment • Enhances the Solution necessary to account for the scope of the SSAP project • Determines appropriate methods to integrate components of the system • Develops system documentation • Programs application functionality • Performs unit and system testing • Supports other testing • Performs system implementation
Vendor DBA/Data Modeler	• Understands the existing database environment • Coordinates with CTC staff regarding database configuration requirements • Develops, tests, tunes and implements the physical data environment for the solution • Understands the existing data environment • Identifies, diagrams and catalogues the logical data structures required to support the solution • Identifies and documents data migration structures • Designs enhancements for CTC's Data Model that are necessary to account for the scope of the SSAP project
Vendor Technical Staff	• Determines appropriate methods to integrate components of the system • Understands how the proposed solution will support the

Role	Responsibilities
	Commission
	• Develops detailed requirements specifications
	• Develops detailed design specifications
	• Coordinates and perform system and unit testing
	• Develops training materials and conducting training
	• Provides functional implementation support
	• Develops system documentation
	• Assists with technical architecture design
	• Programs application functionality
	• Supports other testing
	• Performs system implementation
	• Provides knowledge transfer to CTC staff
CTC Subject Matter Experts	• Provides input for requirements and design
	• Represents the project from a business perspective
	• Prioritizes user acceptance components
	• Manages and implements the acceptance test work plan
	• Communicates test results to the IT teams
	• Escalates risks and mitigation measures to the appropriate organization level
	• Participates in end user acceptance testing
	• Participates in user training
	• Participates in outreach and communication prior to and during implementation.

6.2.8   PROJECT SCHEDULE

WBS	Task Name	Duration	Start	Finish	Predecessors
1	**Phase I. INITIATION**	**148 days**	**Tue 1/20/15**	**Thu 8/13/15**	
1.1	Submit FSR to Dept. of Tech	1 day	Tue 1/20/15	Tue 1/20/15	
1.2	Receive Approval of FSR	30 days	Wed 1/21/15	Tue 3/3/15	2
1.3	SSAP Project Funded	1 day	Wed 7/1/15	Wed 7/1/15	3
1.4	**Obtain Project Manager (PM) from CalTech**	**87 days**	**Wed 3/4/15**	**Thu 7/2/15**	
1.4.1	Identify Hours Needed for PM	1 day	Wed 3/4/15	Wed 3/4/15	3
1.4.2	Formally Request PM	25 days	Thu 3/5/15	Wed 4/8/15	6
1.4.3	PM Start Date	1 day	Thu 7/2/15	Thu 7/2/15	11,4
1.5	**Obtain IPO Consultant from**	**148 days**	**Tue**	**Thu**	

			1/20/15	8/13/15	
	CalTech				
1.5.1	Identify Hours Needed for IPO	1 day	Wed 3/4/15	Wed 3/4/15	3
1.5.2	Formally Request IPO	25 days	Thu 3/5/15	Wed 4/8/15	10
1.5.3	IPO Start Date	1 day	Fri 7/3/15	Fri 7/3/15	11,4,8
1.5.4	**Software and System Requirements for Phases II, III and IV**	**148 days**	**Tue 1/20/15**	**Thu 8/13/15**	
1.5.4.1	**Business Requirements**	**128 days**	**Tue 1/20/15**	**Thu 7/16/15**	
1.5.4.1.1	Develop Business Requirements	68 days	Wed 3/4/15	Fri 6/5/15	3
1.5.4.1.2	External stakeholders Kickoff Meeting	0 days	Tue 1/20/15	Tue 1/20/15	
1.5.4.1.3	External Stakeholder Panel Discuss Requirements for Accreditation Data Dashboard	120 days	Tue 1/20/15	Mon 7/6/15	16
1.6.2	Review Business Requirements	5 days	Tue 7/7/15	Mon 7/13/15	15,17
1.5.4.1.5	Finalize Business Requirements	3 days	Tue 7/14/15	Thu 7/16/15	18
1.5.4.1.6	Sign-Off Business Requirements	0 days	Thu 7/16/15	Thu 7/16/15	19
1.5.4.2	**Functional Requirements**	**76 days**	**Wed 3/4/15**	**Wed 6/17/15**	
1.6.3	Develop Functional Requirements	68 days	Wed 3/4/15	Fri 6/5/15	3
1.6.4	Review Functional Requirements	5 days	Mon 6/8/15	Fri 6/12/15	22
1.5.4.2.3	Finalize Functional Requirements	3 days	Mon 6/15/15	Wed 6/17/15	23
1.5.4.2.4	Sign Off Functional Requirements	0 days	Wed 6/17/15	Wed 6/17/15	24
1.5.4.3	**Non Functional Requirements**	**76 days**	**Wed 3/4/15**	**Wed 6/17/15**	
1.5.4.3.1	Develop Non Functional Requirements	68 days	Wed 3/4/15	Fri 6/5/15	3
1.5.4.3.2	Review Non Functional Requirements	5 days	Mon 6/8/15	Fri 6/12/15	27
1.5.4.3.3	Finalize Non Functional Requirements	3 days	Mon 6/15/15	Wed 6/17/15	28
1.5.4.3.4	Sign-Off Non	0 days	Wed	Wed	29

	Functional Requirements		6/17/15	6/17/15	
1.5.4.4	**Other Documentation**	**23 days**	**Tue 7/14/15**	**Thu 8/13/15**	
1.5.4.4.1	**Deliverable Expectation Document (DED)**	**10.67 days**	**Tue 7/14/15**	**Tue 7/28/15**	
1.5.4.4.1.1	Create DEDs	6.67 days	Tue 7/14/15	Wed 7/22/15	18,23,28
1.5.4.4.1.2	Review DEDs	2.67 days	Wed 7/22/15	Mon 7/27/15	33
1.5.4.4.1.3	Finalize DEDs	1.33 days	Mon 7/27/15	Tue 7/28/15	34
1.5.4.4.2	**Requirements Traceability Matrix (RTM)**	**20 days**	**Fri 7/17/15**	**Thu 8/13/15**	
1.5.4.4.2.1	Create RTM	15 days	Fri 7/17/15	Thu 8/6/15	14,21,26
1.5.4.4.2.2	Review RTM	5 days	Fri 8/7/15	Thu 8/13/15	37
1.5.4.4.2.3	Sign-Off RTM	0 days	Thu 8/13/15	Thu 8/13/15	38
2	**Phase II. CREATE DATA DASHBOARD**	**530 days**	**Thu 7/2/15**	**Wed 7/12/17**	
2.1	**STAGE I. CREATE DATA DASHBOARD**	**271 days**	**Thu 7/2/15**	**Thu 7/14/16**	
2.1.1	**Procure vendor for data dashboard configuration, development and implementation**	**50 days**	**Fri 8/14/15**	**Thu 10/22/15**	
2.1.1.1	Create RFO SOW	10 days	Fri 8/14/15	Thu 8/27/15	13
2.1.1.2	Review SOW	5 days	Fri 8/28/15	Thu 9/3/15	43
2.1.1.3	Revise SOW	2 days	Fri 9/4/15	Mon 9/7/15	44
2.1.1.4	Present SSAP Requirements to the Commission and Receive Approval	1 day	Fri 8/14/15	Fri 8/14/15	13
2.1.1.5	Post RFO/Leveraged Procurement	0 days	Mon 9/7/15	Mon 9/7/15	45
2.1.1.6	Recive RFO Bids	15 days	Tue 9/8/15	Mon 9/28/15	47
2.1.1.7	Review Bids	5 days	Tue 9/29/15	Mon 10/5/15	48
2.1.1.8	Select Contractor	3 days	Tue 10/6/15	Thu 10/8/15	49
2.1.1.9	Award to Contractor	10 days	Fri 10/9/15	Thu	50

				10/22/15	
2.1.2	Procure COTS BI software to create data dashboard	1 day	Thu 7/2/15	Thu 7/2/15	4
2.1.3	Receive COTS BI Software	29 days	Fri 7/3/15	Wed 8/12/15	52
2.1.4	Procure hardware	2 days	Thu 7/2/15	Fri 7/3/15	4
2.1.5	Receive Hardware	58 days	Mon 7/6/15	Wed 9/23/15	54
2.1.6	Planning for Installation of Hardware and Software	10 days	Thu 7/2/15	Wed 7/15/15	4
2.1.7	Installation of Hardware and Software	15 days	Thu 7/16/15	Wed 8/5/15	52,54,56
2.1.8	Planning for Design, Configuration and Development	30 days	Fri 10/23/15	Thu 12/3/15	51
2.1.9	Design, Configuration and Development	120 days	Fri 12/4/15	Thu 5/19/16	57,120FF,121FF,122FF,58
2.1.10	**Phase II Stage I Testing**	**26 days**	**Fri 5/20/16**	**Fri 6/24/16**	
2.1.10.1	Conduct Integration/System (end-to-end) Testing	10 days	Fri 5/20/16	Thu 6/2/16	59
2.1.10.2	Conduct Security Testing	5 days	Fri 6/3/16	Thu 6/9/16	61
2.1.10.3	Conduct Performance/Load Testing	1 day	Fri 6/10/16	Fri 6/10/16	62
2.1.10.4	Conduct UAT Testing	10 days	Mon 6/13/16	Fri 6/24/16	63
2.1.11	Obtain Sign Off	1 day	Mon 6/27/16	Mon 6/27/16	123FF,60
2.1.12	**Training**	**269 days**	**Mon 7/6/15**	**Thu 7/14/16**	
2.1.12.1	**Web Broadcasting Upgrade Needed for Training**	**233 days**	**Mon 7/6/15**	**Wed 5/25/16**	
2.1.12.1.1	Procure Hardware and Software	2 days	Mon 7/6/15	Tue 7/7/15	4,54
2.1.12.1.2	Receive Hardware and Software	58 days	Wed 7/8/15	Fri 9/25/15	68
2.1.12.1.3	Install Web Broadcasting Upgrade	30 days	Wed 7/8/15	Tue 8/18/15	68,29
2.1.12.1.4	Testing and Implementation	10 days	Wed 8/19/15	Tue 9/1/15	70
2.1.12.1.5	Create Training Materials	30 days	Thu 4/14/16	Wed 5/25/16	119
2.1.12.2	Provide Training to End	10 days	Fri 7/1/16	Thu	74,72

	Users			7/14/16	
2.1.13	Phase II Stage I Implementation	1 day	Thu 6/30/16	Thu 6/30/16	185,65
2.1.14	Stage 1 of Data Dashboard Complete	0 days	Thu 7/14/16	Thu 7/14/16	73,74
2.2	**STAGE II. CREATE EXPANDED DATA DASHBOARD**	**259 days**	**Fri 7/15/16**	**Wed 7/12/17**	
2.2.1	Planning for Design, Configuration and Development	30 days	Fri 7/15/16	Thu 8/25/16	75,137FF
2.2.2	Design, Configuration and Development	90 days	Tue 1/3/17	Mon 5/8/17	77,144FF
2.2.3	**Phase II Stage II Testing**	**31 days**	**Tue 5/9/17**	**Tue 6/20/17**	
2.2.3.1	Conduct Integration/System (end-to-end) Testing	10 days	Tue 5/9/17	Mon 5/22/17	78
2.2.3.2	Conduct Regression Testing	5 days	Tue 5/23/17	Mon 5/29/17	80
2.2.3.3	Conduct Security Testing	5 days	Tue 5/30/17	Mon 6/5/17	81
2.2.3.4	Conduct Performance/Load Testing	1 day	Tue 6/6/17	Tue 6/6/17	82
2.2.3.5	Conduct UAT Testing	10 days	Wed 6/7/17	Tue 6/20/17	83
2.2.4	Obtain Sign Off	1 day	Wed 6/21/17	Wed 6/21/17	84
2.2.5	Update Training Materials	10 days	Thu 6/22/17	Wed 7/5/17	85
2.2.6	Provide Training to End Users	5 days	Thu 7/6/17	Wed 7/12/17	86
2.2.7	Phase II Stage II Implementation	1 day	Thu 6/22/17	Thu 6/22/17	85
2.2.8	Stage 1 of Data Dashboard Complete	0 days	Wed 7/12/17	Wed 7/12/17	87,88
3	**Phase III. CASE AND CTC ONLINE ENHANCEMENTS TO COLLECT ADDITIONAL DATA, IMPROVE DATA ACCURACY AND SECURITY**	**500 days**	**Fri 7/17/15**	**Thu 6/15/17**	
3.1	**CASE AND CTC ONLINE ENHANCEMENTS NEEDED FOR STAGE 1 OF THE DATA**	**245 days**	**Fri 7/17/15**	**Thu 6/23/16**	

	DASHBOARD				
3.1.1	**Procure Contractor for CASE, CTC Online and Data Cleansing System Enhancements**	**123 days**	**Fri 7/17/15**	**Tue 1/5/16**	**3**
3.1.1.1	**RFP/MSA Creation**	**123 days**	**Fri 7/17/15**	**Tue 1/5/16**	
3.1.1.1.1	Develop RFP/MSA Based on Requirements Defined Above in 1.5.4	17 days	Fri 7/17/15	Mon 8/10/15	20,25,30
3.1.1.1.2	CTC Review of RFP/MSA	5 days	Tue 8/11/15	Mon 8/17/15	94
3.1.1.1.3	Complete Edits to RFP/MSA	5 days	Tue 8/18/15	Mon 8/24/15	95
3.1.1.1.4	CTC Sign Off on RFP/MSA	3 days	Tue 8/25/15	Thu 8/27/15	96
3.1.1.1.5	Dept of Technology Review of RFP	30 days	Fri 8/28/15	Thu 10/8/15	97
3.1.1.1.6	Complete Edits from Dept of Technology Review	5 days	Fri 10/9/15	Thu 10/15/15	98
3.1.1.1.7	Final Submission to Dept of Technology	0 days	Thu 10/15/15	Thu 10/15/15	99
3.1.1.1.8	Final Dept of Technology Review	5 days	Fri 10/16/15	Thu 10/22/15	100
3.1.1.1.9	Complete Edits from Dept of Technology Review	3 days	Fri 10/23/15	Tue 10/27/15	101
3.1.1.1.10	Dept of Technology Final Review & Approval	5 days	Wed 10/28/15	Tue 11/3/15	102
3.1.1.1.11	Notice of Solicitation Posted	0 days	Tue 11/3/15	Tue 11/3/15	103
3.1.1.1.12	Question and Answer from Bidders	1 day	Wed 11/11/15	Wed 11/11/15	104FS+5 days
3.1.1.1.13	Proposals Due from Bidders	20 days	Wed 11/4/15	Tue 12/1/15	104,105FF
3.1.1.1.14	CTC Review of Bidders Proposals	5 days	Wed 12/2/15	Tue 12/8/15	106
3.1.1.1.15	Obtain CTC Approval of Contract	10 days	Wed 12/9/15	Tue 12/22/15	107
3.1.1.1.16	Notice of Intent to Award	0 days	Tue 12/22/15	Tue 12/22/15	108
3.1.1.1.17	Protest Period	10 days	Wed 12/23/15	Tue 1/5/16	109
3.1.1.1.18	Contract Awarded	0 days	Tue 1/5/16	Tue 1/5/16	110
3.1.2	Create a Data Model for	30 days	Wed 1/6/16	Tue	111

	all of CTC's Databases			2/16/16	
3.1.3	Planning All of the Changes that need to happen to CASE and CTC Online for Stage 1	10 days	Wed 2/17/16	Tue 3/1/16	112
3.1.4	System Design	15 days	Wed 3/2/16	Tue 3/22/16	113
3.1.5	Vendor Provide System Design Document, Including User Authen.	0 days	Tue 3/22/16	Tue 3/22/16	114
3.1.6	CTC Review System Design Document	5 days	Wed 3/23/16	Tue 3/29/16	115
3.1.7	Vendor Revise System Design Document	5 days	Wed 3/30/16	Tue 4/5/16	116
3.1.8	CTC Review System Design Document	5 days	Wed 4/6/16	Tue 4/12/16	117
3.1.9	CTC Approve System Design Document	1 day	Wed 4/13/16	Wed 4/13/16	118
3.1.10	CASE and CTC Online Development	20 days	Thu 4/14/16	Wed 5/11/16	119
3.1.11	CASE Data Cleansing	25 days	Wed 4/13/16	Tue 5/17/16	118
3.1.12	FileMaker Data Cleansing	60 days	Fri 8/14/15	Thu 11/5/15	13
3.1.13	**Conduct Testing for Phase III Stage 1, Including User Authen., and FileMaker Testing**	**26 days**	**Wed 5/18/16**	**Wed 6/22/16**	
3.1.13.1	Conduct Integration/System (end-to-end) Testing	10 days	Wed 5/18/16	Tue 5/31/16	120,121,122,134
3.1.13.2	Conduct Regression Testing	5 days	Wed 6/1/16	Tue 6/7/16	124
3.1.13.3	Conduct Security Testing	5 days	Wed 6/1/16	Tue 6/7/16	124
3.1.13.4	Conduct Performance/Load Testing	1 day	Wed 6/8/16	Wed 6/8/16	126
3.1.13.5	Conduct UAT Testing	10 days	Thu 6/9/16	Wed 6/22/16	127
3.1.14	Obtain Sign Off	0 days	Wed 6/22/16	Wed 6/22/16	123
3.1.15	Phase III Stage I Implementation	1 day	Thu 6/23/16	Thu 6/23/16	129
3.1.16	**USER AUTHENTICATION FOR CTC ONLINE FOR**	**122 days**	**Wed 1/6/16**	**Thu 6/23/16**	

	EDUCATORS				
3.1.16.1	Planning	10 days	Wed 1/6/16	Tue 1/19/16	111
3.1.16.2	Design	15 days	Wed 1/20/16	Tue 2/9/16	132
3.1.16.3	Development	45 days	Wed 2/10/16	Tue 4/12/16	133,165
3.1.16.4	Implementation	1 day	Thu 6/23/16	Thu 6/23/16	129
3.2	**CASE AND CTC ONLINE ENHANCEMENTS NEEDED FOR STAGE 2 OF DATA DASHBOARD**	**255 days**	**Fri 6/24/16**	**Thu 6/15/17**	
3.2.1	Planning All of the Changes that need to happen to CASE and CTC Online for Stage 1	30 days	Fri 6/24/16	Thu 8/4/16	130
3.2.2	System Design	30 days	Fri 8/5/16	Thu 9/15/16	137
3.2.3	Vendor Provide Updated System Design Document	0 days	Thu 9/15/16	Thu 9/15/16	138
3.2.4	CTC Review System Design Document	5 days	Fri 9/16/16	Thu 9/22/16	139
3.2.5	Vendor Revise System Design Document	5 days	Fri 9/23/16	Thu 9/29/16	140
3.2.6	CTC Review System Design Document	5 days	Fri 9/30/16	Thu 10/6/16	141
3.2.7	CTC Approve System Design Document	2 days	Fri 10/7/16	Mon 10/10/16	142
3.2.8	Development	150 days	Tue 10/11/16	Mon 5/8/17	143
3.2.9	CASE Data Cleansing	30 days	Tue 10/11/16	Mon 11/21/16	143
3.2.10	**Conduct Testing for Phase III Stage 2**	**26 days**	**Tue 5/9/17**	**Tue 6/13/17**	
3.2.10.1	Conduct Integration/System (end-to-end) Testing	10 days	Tue 5/9/17	Mon 5/22/17	144
3.2.10.2	Conduct Regression Testing	5 days	Tue 5/23/17	Mon 5/29/17	147
3.2.10.3	Conduct Security Testing	5 days	Tue 5/23/17	Mon 5/29/17	147
3.2.10.4	Conduct Performance/Load Testing	1 day	Tue 5/30/17	Tue 5/30/17	149

3.2.10.5	Conduct UAT Testing	10 days	Wed 5/31/17	Tue 6/13/17	148,149,150
3.2.11	Obtain Sign Off	1 day	Wed 6/14/17	Wed 6/14/17	151
3.2.12	Phase III Stage II Implementation	1 day	Thu 6/15/17	Thu 6/15/17	152
4	**Phase IV. SECURITY ENHANCEMENTS - REPLACE Network Security Device F5**	**61 days**	**Wed 7/8/15**	**Wed 9/30/15**	
4.1	Procure replacement for F5	2 days	Wed 7/8/15	Thu 7/9/15	68
4.2	Receive F5 Equipment	58 days	Fri 7/10/15	Tue 9/29/15	155
4.3	Planning	5 days	Thu 8/6/15	Wed 8/12/15	155,57
4.4	Installation and Configuration	30 days	Thu 8/13/15	Wed 9/23/15	157
4.5	**Conduct Testing for Phase IV**	**4 days**	**Thu 9/24/15**	**Tue 9/29/15**	
4.5.1	Conduct Integration/System (end-to-end) Testing	1 day	Thu 9/24/15	Thu 9/24/15	158
4.5.2	Conduct Security Testing	1 day	Fri 9/25/15	Fri 9/25/15	160
4.5.3	Conduct Performance/Load Testing	1 day	Mon 9/28/15	Mon 9/28/15	161
4.5.4	Conduct UAT Testing	1 day	Tue 9/29/15	Tue 9/29/15	162
4.6	Obtain Sign Off	0 days	Tue 9/29/15	Tue 9/29/15	163
4.7	Phase IV Implementation	1 day	Wed 9/30/15	Wed 9/30/15	164
5	**Phase V. UPGRADE/MIGRATION OF CTC WWW SITE**	**320 days**	**Thu 4/9/15**	**Wed 6/29/16**	
5.1	**Procure contractor to upgrade/migrate the CTC WWW site**	**71 days**	**Fri 7/10/15**	**Fri 10/16/15**	
5.1.1	Gather Requirments for SOW	30 days	Fri 7/10/15	Thu 8/20/15	4,155
5.1.2	Create RFO SOW	10 days	Fri 8/21/15	Thu 9/3/15	168
5.1.3	Review SOW	5 days	Fri 9/4/15	Thu 9/10/15	169
5.1.4	Revise SOW	1 day	Fri 9/11/15	Fri 9/11/15	170
5.1.5	Post RFO/Leveraged	10 days	Mon	Fri 9/25/15	171

	Procurement		9/14/15		
5.1.6	Review Bids	5 days	Fri 10/9/15	Thu 10/15/15	172,50
5.1.7	Award to Contractor	1 day	Fri 10/16/15	Fri 10/16/15	173
5.2	Create Service Request for OTech to Create WWW Site for CTC	10 days	Thu 4/9/15	Wed 4/22/15	7
5.3	OTech setup website for CTC	60 days	Thu 7/2/15	Wed 9/23/15	175,4
5.4	Planning	30 days	Mon 10/19/15	Fri 11/27/15	176,174
5.5	Ugrade and Migration of CTC's Entire WWW site to the New WWW Site	120 days	Mon 11/30/15	Fri 5/13/16	177
5.6	**Conduct Testing for Phase V**	**31 days**	**Mon 5/16/16**	**Mon 6/27/16**	
5.6.1	Conduct Integration/System (end-to-end) Testing	5 days	Mon 5/16/16	Fri 5/20/16	178
5.6.2	Conduct Security Testing	5 days	Mon 5/23/16	Fri 5/27/16	180
5.6.3	Conduct Performance/Load Testing	1 day	Mon 5/30/16	Mon 5/30/16	181
5.6.4	Conduct UAT and Regression Testing	20 days	Tue 5/31/16	Mon 6/27/16	182
5.7	Obtain Sign Off	1 day	Tue 6/28/16	Tue 6/28/16	183,182,181
5.8	Phase V Implementation	1 day	Wed 6/29/16	Wed 6/29/16	184
6	**Phase VI. TECHNOLOGY RECOVERY SITE FOR COMMISSION'S CRITICAL APPLICATIONS**	**341 days**	**Wed 3/4/15**	**Wed 6/22/16**	
6.1	Create Service Request for OTech to Provide Two Racks in their Tenant Managed Services (TMS) Area for CTC	30 days	Wed 3/4/15	Tue 4/14/15	3
6.2	OTech Prepare TMS for CTC	30 days	Thu 7/2/15	Wed 8/12/15	4
6.3	Procure hardware for technology recovery site	2 days	Mon 10/19/15	Tue 10/20/15	174
6.4	Procure software licenses for technology recovery site	2 days	Wed 10/21/15	Thu 10/22/15	189

6.5	Receive hardware and software for technology recovery site	58 days	Fri 10/23/15	Tue 1/12/16	189,190
6.6	Planning	30 days	Wed 1/13/16	Tue 2/23/16	191
6.7	Installation	45 days	Wed 2/24/16	Wed 5/4/16	192,188,189,190
6.8	**Conduct Testing for Phase VI**	**33 days**	**Thu 5/5/16**	**Mon 6/20/16**	
6.8.1	Conduct Integration/System (end-to-end) Testing	15 days	Thu 5/5/16	Wed 5/25/16	193
6.8.2	Conduct Security Testing	2 days	Thu 5/26/16	Fri 5/27/16	195
6.8.3	Conduct Performance/Load Testing	1 day	Mon 5/30/16	Mon 5/30/16	196
6.8.4	Conduct Regression and UAT Testing	10 days	Thu 6/2/16	Wed 6/15/16	196
6.8.5	Conduct Fail Over Test to make Backup Site Production	1 day	Mon 6/20/16	Mon 6/20/16	197,198
6.9	Obtain Sign Off	1 day	Tue 6/21/16	Tue 6/21/16	199
6.10	Implementation	1 day	Wed 6/22/16	Wed 6/22/16	200
7	**Phase II M&O Plan**	**11 days**	**Fri 6/23/17**	**Fri 7/7/17**	
7.1	Draft Phase II M&O Plan	5 days	Fri 6/23/17	Thu 6/29/17	88
7.2	Submit Phase II M&O Plan for CTC Approval	2 days	Mon 7/3/17	Tue 7/4/17	203
7.3	Update Phase II M&O Plan from CTC Edits	3 days	Wed 7/5/17	Fri 7/7/17	204
7.4	Phase II M&O Plan Development Complete	0 days	Fri 7/7/17	Fri 7/7/17	205
8	**Phase III & IV M&O Plan/Update to CASE/CTC Online**	**272 days**	**Fri 6/24/16**	**Mon 7/10/17**	
8.1	Draft Phase III & IV M&O Plan/Update to CASE/CTC Online	5 days	Fri 6/16/17	Thu 6/22/17	153
8.2	Submit Phase III & IV M&O Plan for CTC Approval	5 days	Fri 6/23/17	Fri 6/30/17	208
8.3	Update Phase III & IV M&O Plan from CTC Edits	5 days	Mon 7/3/17	Fri 7/7/17	209
8.4	Phase III & IV M&O Plan	0 days	Fri 7/7/17	Fri 7/7/17	210

	Development Complete				
8.5	**Phase VI M&O Plan**	**26.33 days**	**Fri 6/24/16**	**Mon 8/1/16**	
8.5.1	Draft Phase VI M&O Plan	15 days	Fri 6/24/16	Thu 7/14/16	201
8.5.2	CTC Review M&O Plan	5 days	Fri 7/15/16	Fri 7/22/16	213
8.5.3	Update Phase VI M&O Plan from Dept Of Technology Edits	5 days	Fri 7/22/16	Mon 8/1/16	214
8.5.4	Phase VI M&O Plan Development Complete	0 days	Mon 8/1/16	Mon 8/1/16	215
8.6	Implementation	1 day	Mon 7/10/17	Mon 7/10/17	211
9	**Phase VII. CLOSEOUT**	**465 days**	**Fri 7/1/16**	**Thu 4/12/18**	
9.1	**Close Out Documentation**	**465 days**	**Fri 7/1/16**	**Thu 4/12/18**	
9.1.1	Create Lessons Learned Matrix	10 days	Tue 7/11/17	Mon 7/24/17	**217**
9.1.2	Lessons Learned Brainstorming Session #1	4 days	Fri 7/1/16	Mon 9/26/16	232
9.1.3	Lessons Learned Brainstorming Session #2	3 days	Fri 6/23/17	Thu 7/13/17	233
9.1.4	Create Final Lessons Learned Document	4 days	Tue 7/25/17	Fri 7/28/17	220
9.1.5	Develop PIER	45 days	Thu 12/28/17	Wed 2/28/18	223,40FS+120 days
9.1.6	Review PIER	20 days	Thu 3/1/18	Wed 3/28/18	224
9.1.7	Revise PIER	10 days	Thu 3/29/18	Wed 4/11/18	225
9.1.8	CTC Sign Off on PIER	1 day	Thu 4/12/18	Thu 4/12/18	226
9.1.9	Submit PIER to Dept of Technology	0 days	Thu 4/12/18	Thu 4/12/18	227
9.1.10	Project Complete	0 days	Thu 4/12/18	Thu 4/12/18	228
10	**Project Milestones**	**599 days**	**Mon 3/9/15**	**Thu 6/22/17**	
10.1	**Phase II Create Data Dashboard**	**514 days**	**Mon 7/6/15**	**Thu 6/22/17**	
10.1.1	Stage I	259 days	Mon 7/6/15	Thu 6/30/16	4,74FF

10.1.2	Stage II	253 days	Tue 7/5/16	Thu 6/22/17	232,88FF
10.2	**Phase III CASE & CTC Online Enhancements**	**507 days**	**Wed 7/8/15**	**Thu 6/15/17**	
10.2.1	Stage I	252 days	Wed 7/8/15	Thu 6/23/16	4,130FF
10.2.2	Stage II	254 days	Mon 6/27/16	Thu 6/15/17	235,153FF
10.3	Phase IV Security Enhancements-Replace F5	61 days	Wed 7/8/15	Wed 9/30/15	165FF,4
10.4	Phase V Upgrade/Migration of CTC WWW Site	343 days	Mon 3/9/15	Wed 6/29/16	185FF,3
10.5	Phase VI Technology Recovery Site	210 days	Thu 9/3/15	Wed 6/22/16	201FF,4

6.2.9 PROJECT MONITORING

The project will be monitored in accordance with state approved policies and documented in the State Administrative Manual (SAM) and the State Information Management Manual (SIMM). The project will also employ the CTC's Project Management Policy and practices embodied in the Project Management Institute's (PMI) Project Management Body of Knowledge (PMBOK®) and the Software Engineering Body of Knowledge.

The project management team will work closely with the individual project teams in order to monitor project progress and effectively manage the project work plan. Using industry-accepted methodology and project management tools (e.g., Microsoft, Excel, Project), the project management team will document and track project phases and activities, as well as project timelines and associated milestones. In addition, the Project Oversight vendor will monitor the project status to ensure that project decisions are appropriate and cost-effective, and will report these findings to the Product Manager and Executive Sponsor regularly. By combining staff expertise with effective project management and the California Project Management Methodology (CA-PMM), CTC can monitor the project while ensuring effective communication and contractor knowledge transfer to ETSS staff.

6.2.10 PROJECT QUALITY

Project quality management will be performed in accordance with the Quality Management section of CTC Project Management Policy and be consistent with the State's established quality control procedures as documented in the State Administrative Manual (SAM) and the State Information Management Manual (SIMM). This includes the specification and monitoring of project quality standards and performing mid-project adjustments/corrections as necessary to ensure that the project will meet its stated objectives.

6.2.11 CHANGE MANAGEMENT

The project management process will follow a three-step approach designed to accommodate reasonable variations from the original work plan. These steps are:

1. Submission of Change Requests—Changes in this project will require submission of a change request that documents the nature of the change, the reason, impact of the change on the project budget, impact on the project schedule, and the impact of not incorporating the change.

2. Review and Discuss with the Project Team—CTC SSAP Project Manager will review the change request with the appropriate project team member to determine the impact of incorporating or not incorporating the change. The change request is evaluated based on its cost and benefit, as well as its relevance to the original scope of the project.

3. Approval or Denial—In order to be implemented, the request must be approved by the Commission.

6.3 Authorization Required

The SSAP Project requires the approval by CTC executive management (which occurred through the development and submittal of this FSR). The project also requires approval from the California Department of Technology. In addition, the approval of the procurement approach must be obtained from the California Department of General Services.

7.0 Risk Register

7.1 Risk Management Worksheet

■ Risk: Potential risks that may occur during a project to implement the proposed solution

■ Probability: Likelihood of the risk occurring (1= low, 5=high)

■ Potential Impact: The severity of the impact (1=low, 5=high)

■ Mitigation Plan: Actions CTC may take to minimize the potential of the risk occurring

Risk	Probability	Potential Impact	Risk Mgmt Action Must Begin…	Risk Level	Cause	Consequence	Mitigation Plan
Human Resources: Skills, Availability							
Development work for CASE and CTC Online, and for data model, may not start on time	3	2	Six months to a year from now	3.96	There may not be enough qualified vendors bidding on the project	Schedule start could be delayed	Schedule sufficient time for vendor procurement and ensure that requirements are clear in the solicitation
Design and development task durations and quality may be impacted from lack of SME availability	4	2	Six months to a year from now	5.28	CTC staff do not have sufficient time to work with the vendor	Project completion dates and deliverable quality may be impacted	Prioritize staff responsibilities to align with project schedule
Lack of subject matter expertise could impact and/or delay vendor deliverables	4	1	Six months to a year from now	2.64	A key project team member is no longer on the project	Project completion dates and deliverable quality may be impacted	Conduct cross training & knowledge transfer between team members
Customer							
End user interface does not meet requirements	3	3	Over a year from now	2.97	There is poor interface with end users	Potential rework may impact project schedule	Allow sufficient time in the project schedule for development and review of requirements

Risk	Probability	Potential Impact	Risk Mgmt Action Must Begin…	Risk Level	Cause	Consequence	Mitigation Plan
Project Management							
There are not enough resources and time to accommodate scope changes	5	3	Six months to a year from now	9.9	There is a change in scope	Project completion date could be delayed	Implement and strictly enforce change control procedures
Requirements Management							
System solution may not satisfy the project objectives	5	3	Six months to a year from now	9.9	The requirements are incomplete or unclear	Potential rework may impact project schedule	Allow sufficient time in the project schedule for development and review of requirements
Advisory panels do not have their data element recommendations ready by June 2015	5	3	Six months to a year from now	9.9	The Commission does not adopt key policy decisions about required data elements in time for project start	Project start could be delayed	Monitor progress of advisory panels' work activities and escalate issues or delays to management quickly
Schedule							
Insufficient vendor resources and/or expertise impact vendor deliverable completion	3	2	Six months to a year from now	3.96	A vendor is unable to implement the project within the project timeline	Project completion date could be delayed	Involve the vendor in the planning phase to ensure that the right resources are assigned to the project
Design and Implementation							
Unforeseen complexity or challenges with design and/or implementation arise during the course of the project	3	3	Over a year from now	2.97	The design and/or implementation challenges of the project cause problems/delays	Project completion date could be delayed	Ensure that issue and risk management procedures include clear escalation path to involve key stakeholders and decision makers early on as issues arise or as risks materialize

7.2   Risk Management Approach

Risk management is the systematic process of assessing, identifying, analyzing, and responding to project risk. It includes maximizing the probability and consequences of positive events and minimizing the probability and consequences of adverse events to project objectives.   A risk is any factor that may potentially interfere with the successful completion of the project's goals. Every project inherently contains risks.

The risk management approach used for the implementation of the enhancements is based on early detection, swift response, close monitoring, impact minimization, and thorough recovery. Early detection is accomplished when team members are encouraged to recognize risks and their efforts to report risks are supported.

Once a risk is identified, it is assessed for criticality and probability. Together, criticality and probability provide a risk value. High-risk values may require immediate action. Lower value risks may be given a "watch" status, which requires monitoring. An item discussed and dismissed as not being a risk is entered in the risk database or some type of electronic file for future monitoring. Regular reports and meetings will result in updates to the status of risks. The team will more closely review any risks with increasing risk value to determine the cause for the increased risk value and to evaluate the need for a response.

When a risk value exceeds an acceptable level, the "owner" of the risk area is notified. The responsible participant will implement a planned response and will report the effectiveness of the planned response to the project manager, who will evaluate the report and determine the necessity of any further action.

Project members will perform the processes and procedures for risk identification, analysis, quantification, prioritization, and approval on an ongoing basis throughout the life of this effort. They will use program reserves and subsequent risk tracking tools. Team members will add new risks and remove old risks to and from "watch" status according to the changing risk values as the project progresses.

7.2.1   RISK SHARING

The Commission is solely responsible for all risks of the SSAP project.

7.2.2   RISK TRACKING AND CONTROL

To reduce the probability of project failure, the ETSS Project Manager and the CTC Project Director will monitor risk throughout the project.

8.0 Economic Analysis Worksheets (EAWs)

The SSAP project FSR Economic Analysis Worksheets (EAWs) lists the costs and benefits of the existing system, the proposed solution and alternative solution. The EAWs are briefly described below, followed by the individual worksheets.

Standard EAW Sheets:

- **EXIS:** *Existing System Cost Worksheet:* This worksheet presents the estimated costs of continuing to utilize the existing systems and processes in support of future business requirements. This includes the costs associated with the current CASES and CTC Online systems as well as the personnel resources needed to support them.

- **ALT (P):** *Proposed System Cost Worksheet—Improve CTC Systems and Data to Create a Data Dashboard for Accreditation:* This worksheet presents the estimated costs of the proposed alternative, entailing enhancements to the current CASE and CTC Online systems and data model, as well as security and technology recovery upgrades. Costs were estimated based on various analyses conducted by the FSR team, including an internal level of effort analysis cost estimates provided by the Business Intelligence vendor.

- **ALT (1***):* *Rejected Alternative 2 Cost Worksheet—Develop Reports using Existing Reporting Software:* This worksheet presents the estimated costs of developing additional reporting using Crystal Reports, as well as making the same additional system, security and technology recovery enhancements as the proposed solution. The level of effort analysis and the FSR team's past experience with Crystal Reports development provided the basis of this estimate.

- **SUM (3)***: Economic Analysis Summary:* This worksheet presents the summary of all the existing, proposed and alternative solutions.

- **FUND:** *Project Funding Plan:* This worksheet documents the Commission's funding approach, supporting the proposed solution alternative for each year of the project lifecycle.

SIMM 20C, Rev. 06/2014   **EXISTING SYSTEM/BASELINE COST WORKSHEET**
Agency/state entity: CTC   All costs to be shown in whole (unrounded) dollars.   Date Prepared: 2/27/2015

Project: 6360-01

	FY 2014/15		FY 2015/16		FY 2016/17		FY 2017/18		FY 2018/19		FY 2019/20		TOTAL	
	PYs	Amts	PYs	Amts	PYs	Amts	PYs	Amts	PYs	Amts	PYs	Amts	PYs	Amts
Continuing Information Technology Costs														
Staff (salaries & benefits)	0.4	47,569	0.4	47,569	0.4	47,569	0.4	47,569	0.4	47,569	0.4	47,569	**2.4**	**285,414**
Hardware Lease/Maintenance		0		0		0		0		0		0		**0**
Software Maintenance/Licenses		68,840		68,840		68,840		68,840		68,840		68,840		**413,040**
Contract Services		0		0		0		0		0		0		**0**
Data Center Services		0		0		0		0		0		0		**0**
Agency Facilities		0		0		0		0		0		0		**0**
Other		0		0		0		0		0		0		**0**
Total IT Costs	**0.4**	**116,409**	**0.4**	**116,409**	**0.4**	**116,409**	**0.4**	**116,409**	**0.4**	**116,409**	**0.4**	**116,409**	**2.4**	**698,454**
Continuing Program Costs:														
Staff	1.3	171,987	1.3	171,987	1.3	171,987	1.3	171,987	1.3	171,987	1.3	171,987	**7.8**	**1,031,922**
Other		0		0		0		0		0		0		**0**
Total Program Costs	**1.3**	**171,987**	**1.3**	**171,987**	**1.3**	**171,987**	**1.3**	**171,987**	**1.3**	**171,987**	**1.3**	**171,987**	**7.8**	**1,031,922**
TOTAL EXISTING SYSTEM COSTS	**1.7**	**288,396**	**1.7**	**288,396**	**1.7**	**288,396**	**1.7**	**288,396**	**1.7**	**288,396**	**1.7**	**288,396**	**10.2**	**1,730,376**

Tasks	Existing Maint.
Data Cleansing/Normalizing	
Data Reporting IT Costs	
Data Reporting Program Costs	
Backup Recovery	$28,640
CTC Web Broadcasting	$23,730
Security - F5	$16,470
Total	$68,840

SIMM 20C, Rev. 06/2014   **PROPOSED ALTERNATIVE:** Improve CTC systems and Data to Create a Data Dashboard for Accreditation

Date Prepared: 2/27/2015

Agency/state entity: CTC   All Costs Should be shown in whole (unrounded) dollars.
Project: 6360-01

	FY 2014/15		FY 2015/16		FY 2016/17		FY 2017/18		FY 2018/19		FY 2019/20		TOTAL	
	PYs	Amts	PYs	Amts	PYs	Amts	PYs	Amts	PYs	Amts	PYs	Amts	PYs	Amts
One-Time IT Project Costs														
Staff (Salaries & Benefits)	0.9	111,591	5.9	735,190	4.9	624,969	0.3	38,813	0.0	0		0	12.0	1,510,563
Hardware Purchase		0		1,529,341		0		0		0		0		1,529,341
Software Purchase/License		0		356,020		98,293		0		0		0		454,313
Telecommunications		0		0		0		0		0		0		0
Contract Services														
Software Customization		0		1,042,882		896,766		0		0		0		1,939,648
Project Management		0		112,560		112,560		0		0		0		225,120
Project Oversight		0		112,560		112,560		0		0		0		225,120
IV&V Services		0		0		0		0		0		0		0
Other Contract Services		0		0		0		0		0		0		0
TOTAL Contract Services		0		1,268,002		1,121,886		0		0		0		2,389,888
Data Center Services		0		88,166		87,816		0		0		0		175,982
Agency Facilities		0		0		0		0		0		0		0
Other		0		0		0		0		0		0		0
Total One-time IT Costs	0.9	111,591	5.9	3,976,719	4.9	1,932,964	0.3	38,813	0.0	0	0.0	0	12.0	6,060,087
Continuing IT Project Costs														
Staff (Salaries & Benefits) *	0.0	0	0.0	0	0.0	0	2.0	225,238	0.0	0	0.0	0	2.0	225,238
Hardware Lease/Maintenance		0		0		0		0		0		0		0
Software Maintenance/Licenses		0		0		0		98,293		0		0		98,293
Telecommunications		0		0		0		0		0		0		0
Contract Services		0		0		0		0		0		0		0
Data Center Services		0		0		0		87,816		0		0		87,816
Agency Facilities		0		0		0		0		0		0		0
Other		0		0		0		0		0		0		0
Total Continuing IT Costs	0.0	0	0.0	0	0.0	0	2.0	411,347	0.0	0	0.0	0	2.0	411,347
Total Project Costs	0.9	111,591	5.9	3,976,719	4.9	1,932,964	2.3	450,160	0.0	0	0.0	0	14.0	6,471,434
Continuing Existing Costs														
Information Technology Staff	0.4	47,569	0.4	47,569	0.4	47,569	0.4	47,569	0.0	0	0.0	0	1.6	190,276
Other IT Costs		68,840		68,840		68,840		68,840		0		0		275,360
Total Continuing Existing IT Costs	0.4	116,409	0.4	116,409	0.4	116,409	0.4	116,409	0.0	0	0.0	0	1.6	465,636
Program Staff	1.3	171,987	1.3	171,987	1.3	171,987	1.3	171,987	0.0	0	0.0	0	5.2	687,948
Other Program Costs		0		0		0		0		0		0		0
Total Continuing Existing Program Costs	1.3	171,987	1.3	171,987	1.3	171,987	1.3	171,987	0.0	0	0.0	0	5.2	687,948
Total Continuing Existing Costs	1.7	288,396	1.7	288,396	1.7	288,396	1.7	288,396	0.0	0	0.0	0	6.8	1,153,584
TOTAL ALTERNATIVE COSTS	2.6	399,987	7.6	4,265,115	6.6	2,221,360	4.0	738,556	0.0	0	0.0	0	20.8	7,625,018
INCREASED REVENUES		0		0		0		0		0		0		0

Tasks	Hardware	Software	Additional Maint.	Otech Costs	Consulting	Total One Time	Total New Ongoing	Total Cost
Data Dashboard Costs Maint. Starts in 2016/17	335,924	261,250	36,750	0	1,567,796	2,164,970	36,750	2,238,470
CTC Web Migration	0	0	0	30,000	110,220	110,220	30,000	200,220
CTC Web Broadcasting (hardware includes install)	84,205	23,227	(3,567)	0	0	107,432	(3,567)	96,731
Security - F5	178,494		16,470	0	0	178,494	16,470	227,904
Backup Recovery (OTech costs $350 is one time)	930,718	10,000	48,640	58,166	0	941,068	106,456	1,260,436
Total	1,529,341	294,477	98,293	88,166	1,678,016	3,502,184	186,109	4,023,761

Note: The Commission anticipates a five-year replacement cycle for hardware, funding for this hardware replacement is not currently in the Commission's appropriation.

Note: Redirected resources contribute to project costs, $225,238 of one time project funds for 2015/16 and 2016/17 is being used to fund overtime and temp help, these costs will be ongoing in 2017/18 and in future FY's to support the new work from the SSAP Project.

Note: Although some project closeout tasks will be completed in 2017/18 by redirected staff, the system will be fully implemented in 2016/17 and thus 2017/18 continuing costs considered are M&O only.

Ongoing Costs for: redirected resources, software licensing and data center services will be absorbed within the Commission's budget.

SIMM 20C, Rev. 06/2014 **ALTERNATIVE #1:** Develop Reports using Existing Reporting Software

Date Prepared: 2/27/2015

Agency/state entity: CTC
Project: 6360-01

All Costs Should be shown in whole (unrounded) dollars.

	FY 2014/15 PYs	FY 2014/15 Amts	FY 2015/16 PYs	FY 2015/16 Amts	FY 2016/17 PYs	FY 2016/17 Amts	FY 2017/18 PYs	FY 2017/18 Amts	FY 2018/19 PYs	FY 2018/19 Amts	FY 2019/20 PYs	FY 2019/20 Amts	TOTAL PYs	TOTAL Amts
One-Time IT Project Costs														
Staff (Salaries & Benefits)	0.9	111,591	5.9	735,190	4.9	624,969	0.3	38,813	0.0	0	0.0	0	12.0	1,510,563
Hardware Purchase		0		1,209,212		0		0		0		0		1,209,212
Software Purchase/License		0		60,000		0		0		0		0		60,000
Telecommunications		0		0		0		0		0		0		0
Contract Services														
Software Customization		0		1,320,636		1,798,566		0		0		0		3,119,202
Project Management		0		112,560		112,560		0		0		0		225,120
Project Oversight		0		112,560		112,560		0		0		0		225,120
IV&V Services		0		0		0		0		0		0		0
Other Contract Services		0		0		0		0		0		0		0
TOTAL Contract Services		0		1,545,756		2,023,686		0		0		0		3,569,442
Data Center Services		0		350		0		0		0		0		350
Agency Facilities		0		0		0		0		0		0		0
Other		0		0		0		0		0		0		0
Total One-time IT Costs	0.9	111,591	5.9	3,550,508	4.9	2,648,655	0.3	38,813	0.0	0	0.0	0	12.0	6,349,567
Continuing IT Project Costs														
Staff (Salaries & Benefits)	0.0	0	0.0	0	0.0	0	2.0	225,238	0.0	0	0.0	0	2.0	225,238
Hardware Lease/Maintenance		0		0		0		0		0		0		0
Software Maintenance/Licenses		0		61,543		61,543		61,543		0		0		184,629
Telecommunications		0		0		0		0		0		0		0
Contract Services		0		0		0		0		0		0		0
Data Center Services		0		61,193		61,193		61,193		0		0		183,579
Agency Facilities		0		0		0		0		0		0		0
Other		0		0		0		0		0		0		0
Total Continuing IT Costs	0.0	0	0.0	122,736	0.0	122,736	2.0	347,974	0.0	0	0.0	0	2.0	593,446
Total Project Costs	0.9	111,591	5.9	3,673,244	4.9	2,771,391	2.3	386,787	0.0	0	0.0	0	14.0	6,943,013
Continuing Existing Costs														
Information Technology Staff	0.4	47,569	0.4	47,569	0.4	47,569	0.4	47,569	0.0	0	0.0	0	1.6	190,276
Other IT Costs		68,840		68,840		68,840		68,840		0		0		275,360
Total Continuing Existing IT Costs	0.4	116,409	0.4	116,409	0.4	116,409	0.4	116,409	0.0	0	0.0	0	1.6	465,636
Program Staff	1.3	171,987	1.3	171,987	1.3	171,987	1.3	171,987	0.0	0	0.0	0	5.2	687,948
Other Program Costs		0		0		0		0		0		0		0
Total Continuing Existing Program Costs	1.3	171,987	1.3	171,987	1.3	171,987	1.3	171,987	0.0	0	0.0	0	5.2	687,948
Total Continuing Existing Costs	1.7	288,396	1.7	288,396	1.7	288,396	1.7	288,396	0.0	0	0.0	0	6.8	1,153,584
TOTAL ALTERNATIVE COSTS	2.6	399,987	7.6	3,961,640	6.6	3,059,787	4.0	675,183	0.0	0	0.0	0	20.8	8,096,597
INCREASED REVENUES		0		0		0		0		0		0		0

Tasks	Hardware	Software	Additional Maint.	Otech Costs	Consulting	Total One Time	Total New Ongoing	Total Cost
Crystal Reports	0	0	0	0	1,748,156	1,748,156	0	1,748,156
CTC Web Migration	0	0		30,000	110,220	110,220	30,000	200,220
CTC Web Broadcasting (hardware includes install)	84,205	23,227	(3,567)	0	0	107,432	(3,567)	96,731
Security - F5	178,494		16,470	0	0	178,494	16,470	227,904
Backup Recovery (OTech costs $350 is one time)	930,718	10,000	48,640	58,166	0	941,068	106,456	1,260,436
Total	1,193,417	33,227	61,543	88,166	1,858,376	3,085,370	149,359	3,533,447

Note: The Hardware will need to be replaced on a five year basis and funding for this hardware replacement is not currently in the Commission's Allocation

Note: Temp Help for 15/16

Note: Although some project closeout tasks are being completed in 2017/18 they are all being completed by redirected staff, all of the systems are fully implemented in 2016/17 and thus 2017/18 continuing costs considered a M&O only.

SIMM 20C, Rev. 06/2014
Agency/state entity: CTC
Project: 6360-01

ECONOMIC ANALYSIS SUMMARY
All costs to be shown in whole (unrounded) dollars.

Date Prepared: 2/27/2015

	FY 2014/15		FY 2015/16		FY 2016/17		FY 2017/18		FY 2018/19		FY 2019/20		TOTAL	
	PYs	Amts	PYs	Amts	PYs	Amts	PYs	Amts	PYs	Amts	PYs	Amts	PYs	Amts
EXISTING SYSTEM														
Total IT Costs	0.4	116,409	0.4	116,409	0.4	116,409	0.4	116,409	0.4	116,409	0.4	116,409	2.4	698,454
Total Program Costs	1.3	171,987	1.3	171,987	1.3	171,987	1.3	171,987	1.3	171,987	1.3	171,987	7.8	1,031,922
Total Existing System Costs	1.7	288,396	1.7	288,396	1.7	288,396	1.7	288,396	1.7	288,396	1.7	288,396	10.2	1,730,376
PROPOSED ALTERNATIVE	**Improve CTC systems and Data to Create a Data Dashboard for Accreditation**													
Total Project Costs	0.9	111,591	5.9	3,976,719	4.9	1,932,964	2.3	450,160	0.0	0	0.0	0	14.0	6,471,434
Total Cont. Exist. Costs	1.7	288,396	1.7	288,396	1.7	288,396	1.7	288,396	0.0	0	0.0	0	6.8	1,153,584
Total Alternative Costs	2.6	399,987	7.6	4,265,115	6.6	2,221,360	4.0	738,556	0.0	0	0.0	0	20.8	7,625,018
COST SAVINGS/AVOIDANCES	(0.9)	(111,591)	(5.9)	(3,976,719)	(4.9)	(1,932,964)	(2.3)	(450,160)	1.7	288,396	1.7	288,396	(10.6)	(5,894,642)
Increased Revenues		0		0		0		0		0		0		0
Net (Cost) or Benefit	(0.9)	(111,591)	(5.9)	(3,976,719)	(4.9)	(1,932,964)	(2.3)	(450,160)	1.7	288,396	1.7	288,396	(10.6)	(5,894,642)
Cum. Net (Cost) or Benefit	(0.9)	(111,591)	(6.8)	(4,088,310)	(11.7)	(6,021,274)	(14.0)	(6,471,434)	(12.3)	(6,183,038)	(10.6)	(5,894,642)		
ALTERNATIVE #1	**Develop Reports using Existing Reporting Software**													
Total Project Costs	0.9	111,591	5.9	3,673,244	4.9	2,771,391	2.3	386,787	0.0	0	0.0	0	14.0	6,943,013
Total Cont. Exist. Costs	1.7	288,396	1.7	288,396	1.7	288,396	1.7	288,396	0.0	0	0.0	0	6.8	1,153,584
Total Alternative Costs	2.6	399,987	7.6	3,961,640	6.6	3,059,787	4.0	675,183	0.0	0	0.0	0	20.8	8,096,597
COST SAVINGS/AVOIDANCES	(0.9)	(111,591)	(5.9)	(3,673,244)	(4.9)	(2,771,391)	(2.3)	(386,787)	1.7	288,396	1.7	288,396	(10.6)	(6,366,221)
Increased Revenues		0		0		0		0		0		0		0
Net (Cost) or Benefit	(0.9)	(111,591)	(5.9)	(3,673,244)	(4.9)	(2,771,391)	(2.3)	(386,787)	1.7	288,396	1.7	288,396	(10.6)	(6,366,221)
Cum. Net (Cost) or Benefit	(0.9)	(111,591)	(6.8)	(3,784,835)	(11.7)	(6,556,226)	(14.0)	(6,943,013)	(12.3)	(6,654,617)	(10.6)	(6,366,221)		
ALTERNATIVE #2														
Total Project Costs	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0
Total Cont. Exist. Costs	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0
Total Alternative Costs	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0
COST SAVINGS/AVOIDANCES	1.7	288,396	1.7	288,396	1.7	288,396	1.7	288,396	1.7	288,396	1.7	288,396	10.2	1,730,376
Increased Revenues		0		0		0		0		0		0		0
Net (Cost) or Benefit	1.7	288,396	1.7	288,396	1.7	288,396	1.7	288,396	1.7	288,396	1.7	288,396	10.2	1,730,376
Cum. Net (Cost) or Benefit	1.7	288,396	3.4	576,792	5.1	865,188	6.8	1,153,584	8.5	1,441,980	10.2	1,730,376		

SIMM 20C, Rev. 06/2014

PROJECT FUNDING PLAN

Agency/state entity: CTC

All Costs to be in whole (unrounded) dollars

Date Prepared: 2/27/2015

Project: 6360-01

	FY 2014/15		FY 2015/16		FY 2016/17		FY 2017/18		FY 2018/19		FY 2019/20		TOTALS	
	PYs	Amts	PYs	Amts	PYs	Amts	PYs	Amts	PYs	Amts	PYs	Amts	PYs	Amts
TOTAL PROJECT COSTS	0.9	111,591	5.9	3,976,719	4.9	1,932,964	2.3	450,160	0.0	0	0.0	0	14.0	6,471,434
RESOURCES TO BE REDIRECTED														
Staff	0.0	0	5.9	509,952	4.9	399,731	0.3	38,813	0.0	0	0.0	0	11.1	948,496
Funds:														
Existing System		111,591		0		0		0		0		0		111,591
Other Fund Sources		0		0		0		0		0		0		0
TOTAL REDIRECTED RESOURCES	0.0	111,591	5.9	509,952	4.9	399,731	0.3	38,813	0.0	0	0.0	0	11.1	1,060,087
ADDITIONAL PROJECT FUNDING NEEDED														
One-Time Project Costs	0.0	0	0.0	3,466,767	0.0	1,533,233	0.0	0	0.0	0	0.0	0	0.0	5,000,000
Continuing Project Costs	0.0	0	0.0	0	0.0	0	2.0	411,347	0.0	0	0.0	0	2.0	411,347
TOTAL ADDITIONAL PROJECT FUNDS NEEDED BY FISCAL YEAR	0.0	0	0.0	3,466,767	0.0	1,533,233	0.0	0	0.0	0	0.0	0	0.0	5,000,000
TOTAL PROJECT FUNDING	0.0	111,591	5.9	3,976,719	4.9	1,932,964	0.3	450,160	0.0	0	0.0	0	11.1	6,471,434
Difference: Funding - Costs	(0.9)	0	0.0	0	0.0	0	(2.0)	0	0.0	0	0.0	0	(2.9)	0
Total Estimated Cost Savings	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0
FUNDING SOURCE*														
General Fund	0%	0	100%	3976719	100%	1932964	0%	0	0%	0	0%	0	91%	5909683
Federal Fund	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0
Special Fund	100%	111591	0%	0	0%	0	100%	450160	100%	0	100%	0	9%	561751
Reimbursement	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0
TOTAL FUNDING	100%	111591	100%	3976719	100%	1932964	100%	450160	100%	0	100%	0	100%	6471434

*Type: If applicable, for each funding source, beginning on row 29, describe what type of funding is included, such as local assistance or grant funding, the date the funding is to become available, and the duration of the funding.

Note: Funding represents additional project funds needed in fiscal year.

Note: Redirected resources contribute to project costs, $225,238 of one time project funds for 2015/16 and 2016/17 is being used to fund overtime and temp help, these costs will be ongoing in 2017 /18 and in future FY's to support the new work from the SSAP Project.

Note: Ongoing Costs for: redirected resources, software licensing and data center services will be absorbed within the Commission's budget.

SIMM 20C, Rev. 06/2014

ADJUSTMENTS, SAVINGS AND REVENUES WORKSHEET

Agency/state entity: CTC

Date Prepared: 2/27/2015

Project: 6360-01

Annual Project Adjustments	FY 2014/15		FY 2015/16		FY 2016/17		FY 2017/18		FY 2018/19		FY 2019/20		Net Adjustments	
	PYs	Amts	PYs	Amts	PYs	Amts	PYs	Amts	PYs	Amts	PYs	Amts	PYs	Amts
One-time Costs														
Previous Year's Baseline	0.0	0	0.0	0	0.0	3,466,767	0.0	1,533,233	0.0	0	0.0	0		
(A) Annual Augmentation /(Reduction)	0.0	0	0.0	3,466,767	0.0	(1,933,534)	0.0	(1,533,233)	0.0	0	0.0	0		
(B) Total One-Time Budget Actions	0.0	0	0.0	3,466,767	0.0	1,533,233	0.0	0	0.0	0	0.0	0	0.0	5,000,000
Continuing Costs														
Previous Year's Baseline	0.0	0	0.0	0	0.0	0	0.0	0	2.0	411,347	0.0	0		
(C) Annual Augmentation /(Reduction)	0.0	0	0.0	0	0.0	0	2.0	411,347	(2.0)	(411,347)	0.0	0		
(D) Total Continuing Budget Actions	0.0	0	0.0	0	0.0	0	2.0	411,347	0.0	0	0.0	0	2.0	411,347
Total Annual Project Budget Augmentation /(Reduction) [A + C]	0.0	0	0.0	3,466,767	0.0	(1,933,534)	2.0	(1,121,886)	(2.0)	(411,347)	0.0	0		

[A, C] Excludes Redirected Resources

Total Additional Project Funds Needed [B + D] | 2.0 | 5,411,347 |

Annual Savings/Revenue Adjustments

	FY 2014/15		FY 2015/16		FY 2016/17		FY 2017/18		FY 2018/19		FY 2019/20	
Cost Savings	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0
Increased Program Revenues		0		0		0		0		0		0

9.0 Business Functional Requirements

The following business functional requirements have been identified during the information collection phase of this report. These requirements support and refine the objectives of the proposed system.

Dashboard Creation

- The system must have the ability for end users to manipulate, drill down, and select data for the dashboards.

- The system must allow creation of dashboard reports by staff or others without needing to do programming.

- Dashboards must allow policy makers, legislators and the public to access CTC data.

Dashboard Management

- The dashboard management capabilities must allow for simplicity and ease of use in order to minimize the CTC staff needed to collect data, manipulate data, and produce reports.

Reports and Queries

- The system must have the ability to produce standard reports from a template but also allow staff or others to develop personalized reports based on the identification of data elements.

- The system must be able to allow internal and end users to query the data and drill down in the data to help provide answers to specific questions they may have.

- The system must be able to display data in several different GUI interfaces, including but not limited to multiple graphs, mapping graphics, and be able to display data in table format.

Connecting to Data Sources

- The system must be able to connect to Oracle, OBDC compliant databases (such as FileMaker), excel files, and CSV files as well as accept data from external (Commission-approved programs and employers) sources.

Usability/User Friendliness

- The system must allow non-technical staff and key entities (educator preparation programs at college, universities, school districts and county offices of education as well as employers) and the public to use the system without extensive training or support.

System Administration

- The system must work with all of CTC network standards.

Security and User Permissions

- The system must meet all of the state and federal security standards.

- The system must work with Microsoft Active Directory and provide single sign on capabilities.

- The system must be able to report PII data on an aggregate level and not allow the individual data to be seen by the public.

Performance, Stability and Scalability

- The system must work in a high availability framework, and be able to do load balancing if necessary.

- The system must be scalable to allow for additional data elements and data sources.

System Maintenance

- The system must provide maintenance capabilities for regular patches and updates.

Interoperability

- The system must run on Windows Server.

- The system must work with Oracle databases, ODBC compliant (FileMaker databases), Excel files and CSV files.

Market Viability

- The software must be rated in the "magic quadrant" by technology research firms such as Gartner.

- The software must be well established and the software vendor must provide regular patches and updates.

Appendix A – Stage 1 Business Analysis

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